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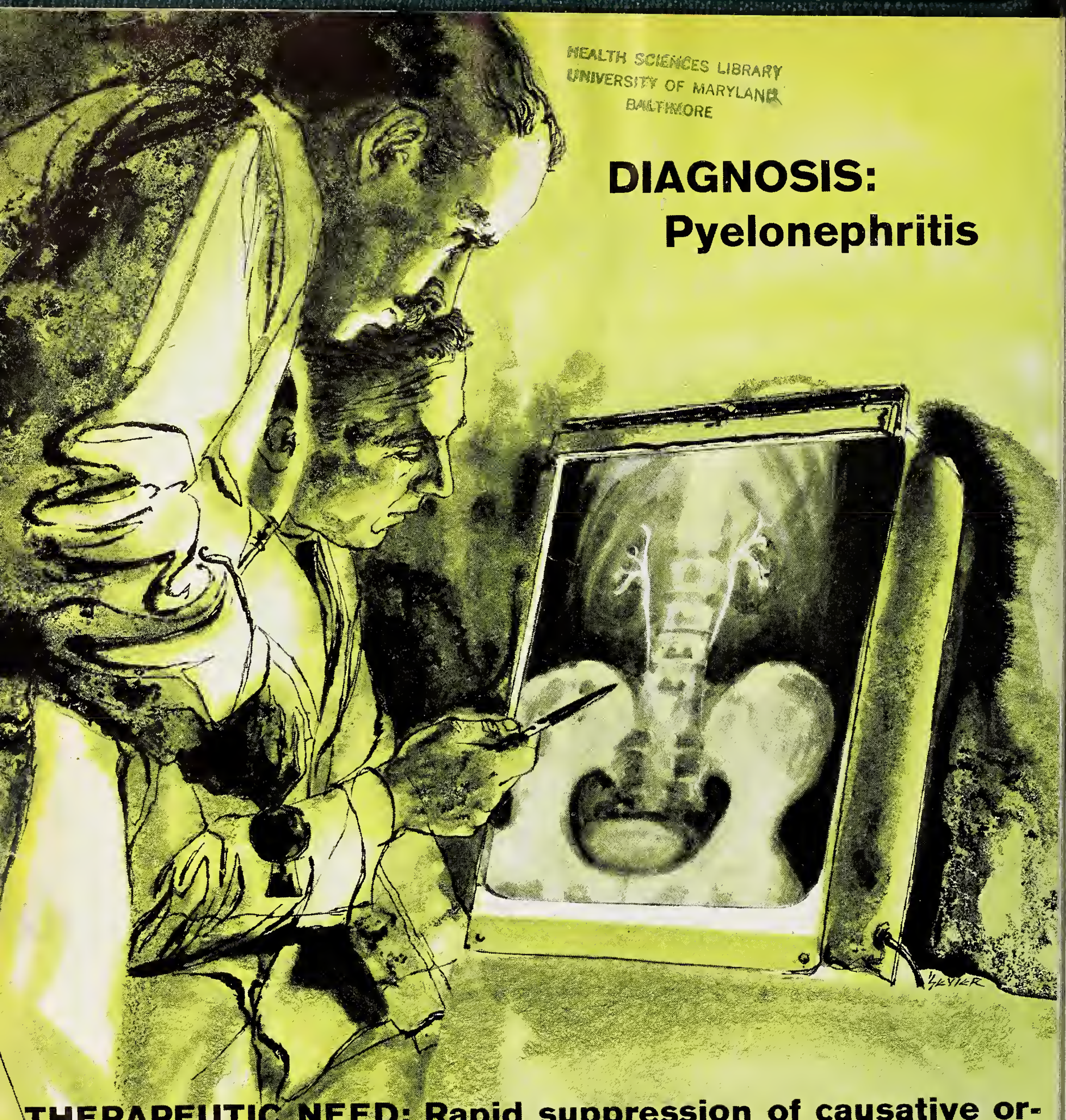

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REFERENCES AND REVIEWS

A STUDY OF "MENTALLY HEALTHY" YOUNG MALES (HOMOCLITES)—R. R. Grinker, Sr., R. R. Grinker, Jr., and J. Timberlake. Arch. Gen. Psychiat.—Vol. 6:405 (June) 1962.

A sample population of apparently mentally healthy young adult males was studied by interview and questionnaire techniques, to ascertain their current behaviors and to determine how and under what conditions they developed. It was possible to separate the subjects into groups representing degrees of adjustment in order to determine significant behavioral and genetic differences. The term "homoclite" was coined to mean nondeviant or "following the common rule," to avoid the values inherent in terms like "normal" or "healthy." The literature on mental health is briefly reviewed. A theoretical discussion attempts to emphasize the hypothetical formulations derived from the study.

* * *

REPOSITORY POLLEN THERAPY—M. A. Green. Ann. Allergy—Vol. 20:193 (March) 1962.

Major deterrents to the general use of repository desensitization therapy have been the occurrence of severe constitutional and local reactions. Significant reduction of these undesirable side effects was effected by the use of advanced, meticulous techniques of preparation and administration of emulsified antigens, preceded by prophylactic sustained-action oral antihistamines and methylprednisolone. In 1935 repository injections given to 516 patients there was virtual elimination of significant local reactions. No systemic reactions followed 653 repositary pollen injections in patients given 3 oral doses of the medication, (1) the evening before, (2) one hour before, and (3) the evening after injection. In a total of 282 injections in which prophylactic medication was omitted the night before, 4 immediate and no delayed constitutional reactions developed.

* * *

EXPIRATORY CARBON DIOXIDE CONCENTRATION CURVE: TEST OF PULMONARY FUNCTION—J. E. Kelsey, E. C. Oldham, and S. M. Horvath, Dis. Chest—Vol. 41:498 (May) 1962.

A test of pulmonary function based on the configuration of the expiratory carbon dioxide concentration curve is described. This curve is obtained by having the subject exhale directly through a rapid response infrared gas analyzer using a breathe-through cell and a strip chart recorder. The test is effective in separating subjects with normal pulmonary function from patients with pulmonary emphysema of varying degree. The respiratory carbon dioxide concentration curve is a valuable test of pulmonary function because of the ease with which it can be obtained.

* * *

ROLE OF PULMONARY RESECTIONS FOR TUBERCULOSIS IN PRESENCE OF DRUG-RESISTANT TUBERCLE BACILLI—T. Haga, T. Asano, S. Watanabe, R. Koga, M. Ono, K. Yoshimura, and R. Yoneda. Dis. Chest—Vol. 41:504 (May) 1962.

From 1948 to 1959, 2,523 pulmonary resections for tuberculosis performed at a national sanatorium have been studied in regard to complication by sputum status prior to operation. In the contaminated group, there was no significant difference in the proportion of complications regardless of sputum status. In the noncontaminated group streptomycin cases showed a higher incidence of complica-

(Continued on Page 56)

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Antibacterial Drugs Prevent Travelers' Bane

A sulfa drug has proved effective in preventing so-called "travelers' diarrhea" in a signifiant number of persons, four New York City researchers reported recently.

In a study involving 473 college students newly arrived in Mexico City, the drug, phthalylsulfathiazole, reduced the incidence of this common tourists' bane by 50 per cent, the medical group reported in the May 5 *Journal of the American Medical Association.*

Another antibacterial drug, neomycin sulfate, tested among college students in Mexico City, also reduced the incidence of the disease, B. H. Kean, M. D., William Schaffner, B. S., Robert W. Brennan, A.B., and Somerset R. Waters, B.E. said.

The combined effects of the drugs reduced the incidence of the more incapacitating variety of the syndrome by two-thirds, they said.

Both drugs suppress the growth of bacteria in the large intestine, the researchers said.

The causes of travelers' diarrhea is not known, they said, but the effectiveness of these antimicrobial agents lends support to the suggestion that bacteria may be involved.

Mexico was selected as the site for the investigation because of the prevalence of tourist diarrhea among visiting students and because educational and governmental officials cooperated completely, they said.

Two studies were conducted, one in the summer of 1960, the other in the winter of 1960-1961, they said.

The students were given either a placebo (a medicinally inactive pill) or one of the two active drugs in pill form to be taken for two weeks.

Among 168 students taking the placebo, 23.8 per cent suffered the illness, the researchers reported. Of 137 taking neomycin, 16.1 per cent became ill and of 168 taking phthalylsulfathiazole. 11.9 per cent became ill, they said.

The effectiveness of the antibacterials in preventing moderate and severe forms of the syndrome also was ascertained. Of 168 students receiving the inactive pill, 17.3 per cent suffered more severe symptoms, they said. Of the 137 receiving neomycin, 5.1 per cent were more seriously affected and of the 168 students receiving phthalylsulfathiazole, 6.6 per cent fell into the more severe category, they said.

"This syndrome is so prevalent as to constitute an important health problem to the large and growing tourist population," the researchers commented. "The threat of tourist diarrhea has led many travelers to seek medical counsel or to resort to their own devices in self-medication."

Previous studies have shown that the most pop-

(Continued on Page 48)

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1. Ford, R. V.: Clin. Res. Notes 2:1 (Dec.) 1959. 2. Ford, R. V.: Cur. Therap. Res. 2:92 (Mar.) 1960. 3. Elliott, J. P., Jr., and Goldman, A. M.: South. M.J. 54:794 (July) 1961.

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References: (1) Moss, J. M.; Schreiner, G. E., and Sweeney, V.: M. Times *89*:12 (Jan.) 1961. (2) El Mahallawy, M., and Sabour, M. S.: J.A.M.A. *173*:1783 (Aug. 20) 1960.

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Red Blood Cells Checked In Heart Attacks

Researchers are investigating increased red blood cell production as a possible contributing factor in heart attacks.

Writing in the April 7 *Journal of the American Medical Association*, Drs. George E. Burch and Nicholas P. DePasquale, New Orleans, said they had found that 100 persons who suffered fatal heart attacks had a "significantly higher" level of red blood cells than 100 comparable persons with no heart disease.

Although it is not possible to draw any definitive conclusions from this study, the data suggest that the incidence of heart attacks, particularly in young patients, is influenced by red blood cell production, the authors said.

It is not known to what extent red blood cell volume influences the function of the heart muscles and flow of blood through the coronary arteries, they said. However, they said, it is known that heart attacks may occur when there is no obstruction in the coronary arteries.

"This would suggest that the flow of blood has stopped as a result of a functional, rather than an organic or physical, obstruction," they said.

Red blood cell volume affects the viscosity, or gumminess, of blood to various degrees throughout the body, the authors explained. Near a narrowed segment of artery, the viscosity of blood would tend to increase and the flow of blood to slow down, they said. In this situation, red blood cell production might tend to predispose to the formation of a clot within the artery, they said.

The failure of coronary circulation which occurs in a heart attack is probably related, in part, to the inability of the heart to produce enough pressure to force the blood through a markedly narrowed segment of coronary artery, they said. The viscosity of the blood "must certainly play a role" in determining the pressure necessary to maintain blood flow through a narrowed artery, they said.

These concepts are highly speculative, the authors added, since the fluid properties of blood in the coronary arteries have received little study.

However, they said, their findings indicate that red blood cell volume should be reduced in patients with coronary artery disease if the volume is above a certain level.

The two physicians are affiliated with Tulane University School of Medicine.

CURABLE ARTHRITIS: TREATMENT OF CHRONIC HYPERTROPHIC PULMONARY OSTEOARTHROPATHY BY SURGERY OF CHEST—E. F. Skinner. Dis. Chest—Vol. 41:571 (May) 1962.

A chest x-ray film is recommended as part of the routine examination of any patient with arthritis. If chronic hypertrophic pulmonary osteoarthropathy is present, it is sometimes curable by eliminating the pulmonary disease with appropriate therapy.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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References: 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123. 2. Fries, E. D.: South M. J. **51**:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP **17**:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. **11**:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. **56**:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. **26**:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. **166**:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. **6**:461, 1959.

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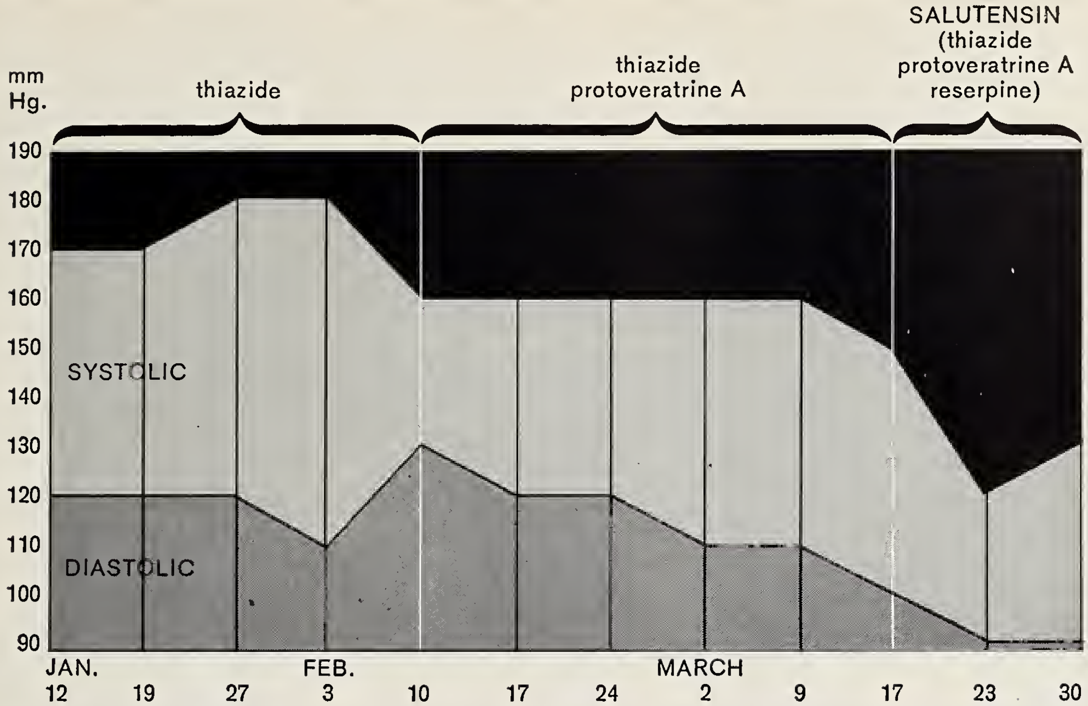
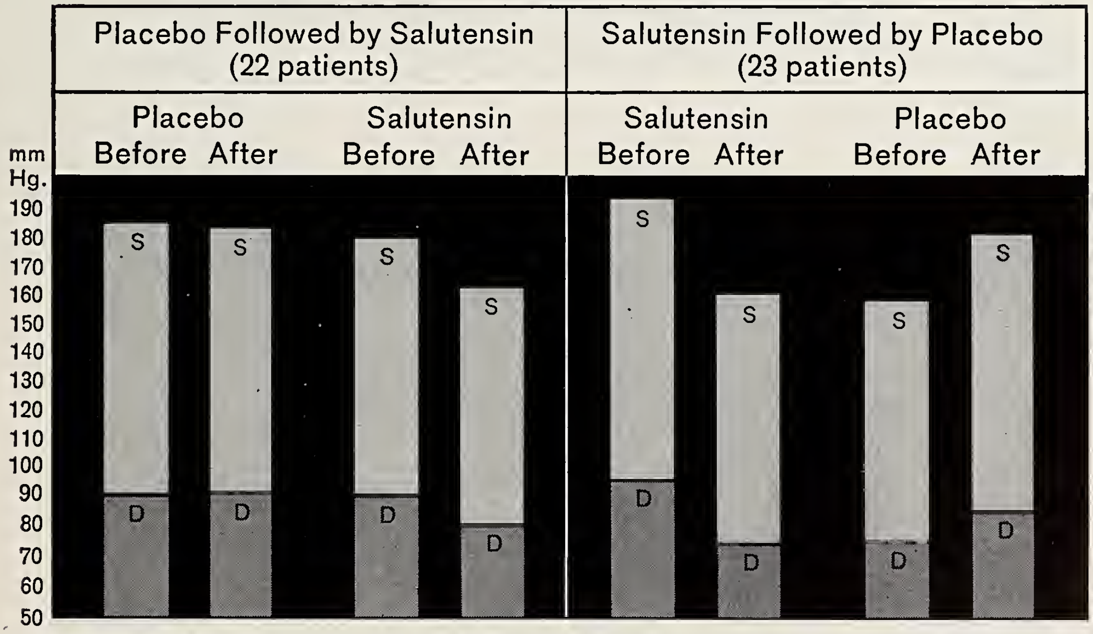
11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE

(Adapted from Spiotta, E. J.: Report to Department of Clinical Investigation, Bristol Laboratories)



3½ WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS USING SALUTENSIN FROM THE START OF THERAPY IN A "DOUBLE BLIND" CROSSOVER STUDY

Mean Blood Pressures—Systolic (S) and Diastolic (D)



In this "double blind" crossover study of 45 patients, the mean systolic and diastolic blood pressures were essentially unchanged or rose during placebo administration, and decreased markedly during the 25 days of Salutensin therapy. (Smith, C. W.: Report to Department of Clinical Investigation, Bristol Laboratories.)

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New Lead in Search for Cause of MD

A new lead was reported recently in the search for the cause or causes of muscular dystrophy.

An abnormality in the distribution of magnesium in the blood of persons suffering the childhood type of the disease was reported by Harris L. Smith, M.D., Robert L. Fischer, Ph.D., and James N. Etteldorf, M.D., Memphis, Tenn.

This previously unrecognized abnormality appears to involve the combining of magnesium with some as yet unidentified substance, perhaps protein, of high molecular weight, the researchers said in the June *American Jaurnal of Diseases of Children*, published by the American Medical Association.

Because of the significant roles played by magnesium and calcium individually and their apparent interrelationships in muscle contraction and relaxation, 21 patients ranging from 3 to 29 years of age were studied to determine the levels of these two metal ions in the blood and in the residue after the blood had been processed by ultrafiltration, they said. The results were compared with 34 normal persons, they said.

The calcium levels among the patients and the normal group did not differ significantly, they said.

On the other hand, twice as much magnesium was found in the blood of normal persons as in dystrophic patients, they said. However, the magnesium

(Continued on Page 38)

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Raddin, J.: Med. Times, July 1961

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Hootnick, H. J.: J. Am. Ger. Soc., 4:1021-1030, 1956

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Marshall, W.: S. D. J. Med. & Pharm., 8:151-153, 1955

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New Lead in Search for Cause of MD

(Continued from Page 34)

found after ultrafiltration was about the same in both groups, they said.

From this finding, the authors theorized that there is an abnormal binding of magnesium to some other substance in the blood of persons with the childhood type of MD. The process of ultrafiltration removes or eliminates the substance responsible for this abnormality, they explained. It appears that during ultrafiltration, alterations occur which release or make available previously bound magnesium, they said.

Since the interfering substances are not ultrafilterable, they are of high molecular weight, the researchers said.

Although the significance of this finding remains to be determined, it appears that the availability of magnesium to activate certain enzymes linked to muscle contraction "might well be a factor" in the development of muscular dystrophy, they said.

In recent years, new impetus has been given the study of metal ions in health and disease by the increasing recognition of their important influences upon activities of enzymes, they said.

Childhood MD, one of four types of muscular dystrophy, begins in early childhood, is inherited and almost always affects males. The disease affects the pelvic muscles first and progresses rapidly.

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Volume 97 JULY 1962 Number 1

Nonpolioviruses and Paralytic Disease

ROBERT L. MAGOFFIN, *M.D., M.P.H.,* **and**
EDWIN H. LENNETTE, *M.D., Ph.D,* **Berkeley**

• A number of nonpolioviruses have been implicated as the probable etiologic agents of paralytic illness clinically resembling poliomyelitis, including certain immunotypes of Coxsackie group A, Coxsackie group B, and ECHO viruses, and the viruses of mumps, herpes simplex and arthropod-borne encephalitides. A number of well documented cases provide evidence that some of these viruses may on occasion be the causative agents of severe, even fatal, myelitis, bulbomyelitis or encephalomyelitis, but they have been associated much more frequently with cases of "poliomyelitis" in which there has been slight to moderate paresis. In the aggregate, various "nonpolioviruses" have been encountered in approximately 10 per cent of the patients with clinical poliomyelitis studied, but it is uncertain how many of these cases may represent coincidental infections not causally related to the current illness.

THE WORK OF ENDERS and associates[7] published in 1949 showing that polioviruses could be propagated *in vitro* in cultures of various non-neural tissues opened the way to the development simultaneously of practical methods for the laboratory diagnosis of poliomyelitis and of formalin-inactivated poliovirus vaccines (Salk type). These two developments led in turn to the increasing recognition of illnesses diagnosed clinically as paralytic poliomyelitis in which laboratory evidence of poliovirus infection could not be found and other viral infections were implicated.

This communication will review briefly some of the recorded observations implicating various "nonpolioviruses" in paralytic disease and summarize the results of virologic studies of cases of clinical paralytic poliomyelitis made in this laboratory since 1956. In this context, the term "paralysis" is used broadly, as is commonly done in the clinical diagnosis of poliomyelitis, to include any clearly demonstrable weakness of localized muscle groups, as opposed to generalized weakness that persists after the acute febrile phase of illness has subsided. It is apparent that this liberal definition includes instances of transient weakness which may be of no permanent consequence to the patient, and that further characterization of paralysis with respect to extent and duration is needed to evaluate the seriousness of disability which may ensue.

Viral infections to be considered in paralytic illnesses

Common Exanthemas of childhood. Involvement of the central nervous system (CNS) associated with measles (rubeola), rubella and chickenpox may take diverse forms, but the clinical features are most commonly those of diffuse or multifocal

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Submitted March 26, 1962.

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Some of the studies which form the basis of this report were conducted in this Laboratory, and were supported by a grant (E-1475) from the National Institute of Allergy and Infectious Diseases, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

encephalitis or encephalomyelitis, including such signs as irritability, convulsions, drowsiness or coma, confusion, aphasia and ataxia.[22,24,31] Thus these infections are not commonly considered in the clinical category of paralytic disease. However, in rare cases of post-measles CNS disease, signs of spinal cord involvement have been predominant,[31] and the occurrence of cranial nerve palsies or respiratory center involvement may in some cases simulate bulbar poliomyelitis. The incidence of post-infectious encephalomyelitis following the common childhood exanthemas is given in a recent review[24] as approximately 1 in 700 cases of measles, 1 in 6,000 cases of rubella and 1 in 6,000 to 10,000 cases of chickenpox.

Herpes simplex. In primary infections, the herpes simplex virus may involve the central nervous system, giving rise to a varied clinical picture ranging from benign meningitis to severe encephalomyelitis. Among the variable manifestations are coma, convulsions, ocular palsies, paresis of muscle groups and sensory changes.[28] Ocular palsies or spinal cord involvement may clinically suggest poliomyelitis. CNS involvement may be the only clinical manifestation of herpes virus infection or may be accompanied by characteristic herpetic lesions of the skin or mucous membranes. CNS involvement is not known to be associated with recurrent episodes of herpetic disease.

Mumps. The mumps virus is now recognized as one of the most common etiologic agents of aseptic meningitis or mild meningoencephalitis, characterized by headache, pleocytosis, signs of meningeal irritation and varying degrees of drowsiness. Although often referred to as a complication, this clinical picture apparently results from direct invasion of the CNS, at least of the meninges, as one of the alternative sites of localization of the virus in the course of mumps virus infection. Thus this syndrome may accompany, follow, precede, or occur without parotitis or other manifestations of mumps virus infection and is commonly estimated to occur in 5 to 10 per cent of all cases of clinical mumps. In some instances the signs of meningitis or meningoencephalitis may be accompanied by muscle pain, tightness of the hamstrings and localized paresis—resembling poliomyelitis. A series of 11 cases of mumps virus infection initially diagnosed clinically as spinal paralytic poliomyelitis was recently described in a report[17] from this laboratory. All the patients were children from 1 to 11 years of age. Four of the patients were referred from the infectious disease service to secondary hospitals for convalescent care because of persistent muscle weakness and tightness. Also, in four instances slight residual weakness was still detectable on follow-up muscle examinations two to five months after onset.

More severe neurologic involvement similar to the demyelinating type of post-infectious encephalomyelitis has also been observed, though rarely, in mumps virus infection.[22,24]

The enteroviruses. The family of human enteroviruses now includes some 60 different agents, most of which have come to light only within the last ten years. There are unsettled questions regarding ultimate classification, but the enteroviruses are currently divided into four major groups: polioviruses (3 types), group A Coxsackie viruses (24 types), group B Coxsackie viruses (6 types) and ECHO viruses (29 types). While it is convenient to refer collectively to "Coxsackie viruses" or "ECHO (entero-cytopathogenic human orphan) viruses," each virus type is antigenically distinct. With the absence of commonly shared antigens, attempts to identify infection with these agents by means of antibody assays of paired serum specimens from patients require a separate serologic test for each type. Thus laboratory diagnosis of an enterovirus infection generally rests upon recovery and identification of the specific viral type augmented by antibody assays for the type of virus recovered.

CNS illnesses associated with "nonpolio" enteroviruses

Aseptic meningitis or meningoencephalitis has been associated with many types of Coxsackie and ECHO viruses through epidemiologic, clinical and laboratory observations, including recovery of a number of virus types from the blood or spinal fluid.[8,14,34] Reports of more severe neurologic disease have been relatively uncommon but several types of Coxsackie and ECHO viruses have been implicated in illnesses resembling paralytic poliomyelitis, ranging in severity from slight paresis to severe and fatal bulbospinal disease, and also in serious encephalomyelitic syndromes. Some of the published observations relative to the role of Coxsackie and ECHO viruses in neurologic diseases are outlined in Table 1.

The most extensive observations have concerned Coxsackie virus, type A7. Several strains of this virus were isolated in Russia in 1952 from two patients with apparent bulbospinal poliomyelitis, and this agent was considered for a time to be "type 4 poliovirus." Subsequent study showed it to be immunogenically similar to American strains of Coxsackie A7.[3] In the United States, one case of clinical poliomyelitis in a three-year-old boy with right lower facial weakness and paresis of the right lower extremity caused by Coxsackie A7 was described by Steigman.[29] Grist,[10] in Scotland, reported

TABLE 1.—*Association of Coxsackie and ECHO Viruses with Neurologic Disease*

Virus Type	Association with Neurologic Disease	References†
COXSACKIE GROUP A:		
A7	Recovered from feces of patients with spinal and bulbar paralysis; some fatal cases. Described in Russia as poliovirus, type 4. Produced neuronal lesions in monkeys.	3,* 10, 14,* 29*
A9	Recovered from feces of patients with predominantly mild spinal paralytic illnesses; occasionally severe paresis.	11, 12, 14,* 18
Other types	A2 recovered from CNS in infant deaths. A4 and A14 produced neuronal lesions in monkeys. Possible synergism between other Group A viruses and poliovirus?	3,* 4, 8*
COXSACKIE GROUP B:		
B2-B5	Recovered from feces of patients with mild to moderate spinal paralytic illnesses in which poliovirus was excluded.	3,* 12, 14,* 18, 21, 29*
B2, B3, B4	Recovered from brain and/or spinal cords of infants with encephalomyelitis and myocarditis. B2 produced neuronal lesions in monkeys.	2, 15*
B3	Recovered from spinal cord of patient with fatal spinal paralytic disease.	12
ECHO VIRUSES:		
E2	Recovered from spinal cord of patient with fatal bulbo-respiratory disease.	29*
E4	Recovered from feces in sporadic cases of mild paresis.	11
E6	Recovered from feces, occasionally spinal fluid, of patients with mild paresis; from spinal fluid of one patient with severe transient paralysis (Guillain-Barré Syndrome). Caused paresis in monkeys.	1, 13, 14,* 16, 25, 33, 34*
E9	Recovered from feces of patients with mild paresis; from spinal fluid of one patient with moderate residual paresis, one case of cerebellar ataxia and from medulla of infant.	9, 14,* 19, 27, 32, 33, 34*
E11	Recovered from feces of patients with moderate to severe paresis; one fatal bulbo-spinal case confirmed by virus isolation and antibody titer rise.	12, 30
Other types	Many types (e.g., 1, 2, 3, 4, 6, 10) have occasionally produced focal neuronal degeneration in infected monkeys, though often without evident neurological signs.	3,* 35

*Review articles.

†This table was compiled from selected references immediately available to the authors and is not presented as a complete bibliography.

the recovery of Coxsackie A7 virus from 33 patients with aseptic meningitis or suspected poliomyelitis, seven of whom had some degree of paralysis, and one of whom, an infant, died. Coxsackie virus A9 has been recovered from the feces of patients with mild to moderate paralysis for which no other etiologic agent was found.[11,12,18,21] Although other group A Coxsackie viruses have not been directly implicated to date in paralytic illnesses, A2 has been recovered from the CNS of infants who died, and types A4 and A14 as well as A7 have caused extensive neuronal lesions in monkeys.[3,8] Also, the simultaneous recovery of Coxsackie A viruses and poliovirus from poliomyelitis patients in a number of studies has suggested the possibility of a synergism between these agents in the causation of paralysis when infections are concurrent.[3] Experimental support for this hypothesis was provided by Dalldorf and Wiegand,[4] who showed that in monkeys inoculated with an attenuated strain of type 1 poliovirus anterior horn cell lesions developed when Coxsackie A7 or A14 infection was superimposed five days later, whereas none of these virus strains induced paralysis when inoculated singly.

Of the six Coxsackie group B viruses, four types (B2-B5) have been repeatedly recovered from the feces in cases of clinical paralytic poliomyelitis with slight to moderate paresis in which evidence of poliovirus infection was lacking.[11,12,18,21] Steigman[29] recovered B5 virus from a child with persistent residual paresis. Kalter[12] recovered Coxsackie B3 virus from the spinal cord of a five-year-old girl who died after a fulminating clinical course of bulbospinal poliomyelitis. Also several types of group B viruses have been recovered from the brain or the spinal cord as well as from the heart and other tissues of small infants who died of generalized Coxsackie virus infection.[15] In these infections of infants myocarditis usually was dominant in the clinical picture but signs of encephalomyelitis have been noted in about one third of the cases reported, and focal histologic lesions of the brain, brain stem and spinal cord have been found in a high proportion of the cases studied.

With respect to the ECHO viruses, several types (types 4, 6, 9, 11, and 16) have been responsible for outbreaks of aseptic meningitis, and several additional types have been associated with sporadic cases of this syndrome.[14,34] At least eight types, namely, 2, 4, 5, 6, 9, 11, 12 and 18, have been isolated from the spinal fluid during ill-

TABLE 2.—*Virologic Findings in Cases of Clinical Paralytic Poliomyelitis by Vaccination Status. California 1956-1960*

Doses Vaccine (Salk)	Number of Patients	Per Cent of Patients, by Laboratory Result						
			Nonpoliovirus					
		Poliovirus	Coxsackie	ECHO	Other	Total Nonpolio	Inconclusive	Negative
Total	706*	62	4	3	3	10	18	10
None	260	80	2	<1	2	4	10	6
1 dose	122	70	2	2	6	9	15	6
2 doses	177	50	6	7	3	17	21	12
3+ doses	139	37	9	4	2	15	29	19

*Total includes 8 patients whose vaccination status was unknown.

ness.[5,6,14,26] In addition to the usual manifestations of the aseptic meningitis syndrome, mild to moderate paresis of scattered muscle groups has been noted in several types of ECHO virus infections. Disability has usually been minor and transitory, although in some cases mild weakness has persisted for three to six months or longer. Minor degrees of paresis have been linked to ECHO virus types 1,[23] 4,[11] 6,[13,16,33] 9,[9,27,33] and 11.[12] There are several reports, however, of more serious paralytic and encephalomyelitic disease attributed to ECHO viruses. Parker and associates[25] recently reported the recovery of ECHO 6 virus from the feces and spinal fluid of a patient with severe paralysis, clinically classified as the Landry-Guillain-Barre syndrome. Steigman[29,30] has described two fatal cases of apparent bulbospinal poliomyelitis, both in two-year-old children, with flaccid paralysis of the extremities and respiratory insufficiency requiring tracheotomy and placement in a respirator. The spinal cord of one child yielded ECHO 2 virus, and ECHO 11 virus infection was present in the other case. Another fatal illness, seen by Verlinde[32] in Holland, occurred in an eight-month-old infant who died after 24 hours of fever and coma; ECHO 9 was recovered from the medulla. In an extensive epidemic of ECHO 9 infections in Milwaukee in 1957, Sabin and others[27] observed that among 213 patients in hospitals (predominantly with aseptic meningitis) one 20-year-old girl at first was thought to have spinal paralytic poliomyelitis because of spasm of the spinal musculature and weakness of the hips which required the use of crutches for about two months. Five patients had signs suggesting involvement of the cerebellum and vestibular nuclei—such as vertigo, loss of balance, nystagmus and facial grimacing. Cerebellar ataxia was subsequently observed by McAllister[19] in a five-year-old boy whose spinal fluid contained ECHO 9 virus. In experimental infections, ECHO types 6 and 16 produced paresis in macacus monkeys,[1] and focal neuronal lesions not clinically evident have been noted in occasional monkeys infected with various ECHO viruses including types 1, 2, 3, 4, 6, 10, 13.[35]

Frequency of association of nonpolioviruses with paralytic disease

In attempting to assess the frequency of association of various nonpolioviruses with paralytic illness in California on the basis of virologic studies made in our laboratory since 1956, it has been apparent that the results varied appreciably with respect to the patient's age, immunizations against poliomyelitis and the severity of paralysis.

Age. In etiologic studies of clinical paralytic poliomyelitis in California,[18] poliovirus was recovered from about 80 per cent of the patients under five years of age, as compared with 60 to 65 per cent of older children and adults. Brown and associates[2] noted a generally similar age trend in the recovery of poliovirus from patients in the 1958 epidemic of poliomyelitis in Detroit. Coxsackie and ECHO virus infections were also encountered more frequently in paralytic illnesses in children under 15 years of age but there was no pronounced grouping in any age bracket within this age range.[18]

Immunization with poliovirus vaccine (Salk). Poliovirus has been less often recovered and other viral infections more frequently found in cases of paralytic illness in patients immunized against poliomyelitis than in the nonimmunized. This is illustrated in Table 2, which gives the virologic findings in 706 cases of suspected paralytic poliomyelitis studied in this laboratory from 1956-1960. Either by recovery of the virus or demonstration of a significant antibody titer rise, poliovirus infection was confirmed in 80 per cent of the patients in the nonvaccinated group, in about 70 per cent of those who had received one dose of vaccine, in 50 per cent of those who had two doses, and in less than 40 per cent of those who had three or more doses. Conversely, the frequency of nonpoliovirus infections increased from less than five per cent in the nonvaccinated group to 15 per cent in the three-dose group. Although differing in actual percentages, the findings of Brown and associates[2] in the Detroit epidemic in 1958 showed a fairly similar pattern of decrease in the proportion of

TABLE 3.—Virologic Findings in 802 Cases of Clinical Poliomyelitis According to Type and Severity of Paralysis*

Laboratory Findings	Per Cent Distribution						
		Spinal Paralytic				Bulbar and Bulbo-Spinal	
	Nonparalytic	Minimal	Mild	Moderate	Severe	Mild-Mod.	Severe
Total, per cent	100†	100	100	100	100	100	100
Poliovirus	12	21	36	63	85	86	68
Doubtful evidence of poliovirus	23	29	19	15	8	7	20
Negative	27	17	19	15	5	2	12
Nonpoliovirus	36	26	23	8	0	5	0
Poliovirus and nonpoliovirus	3	7	3	0	1	0	0
Number of cases, total 802	444	70	69	62	73	43	41

*Modified from Magoffin, R. L., Lennette, E. H., Hollister, A. C., and Schmidt, N. J.: An etiologic study of clinical paralytic poliomyelitis, J.A.M.A., 175:269-278, Jan. 28, 1961.

†Percentages are rounded independently and may not add to total.

laboratory-confirmed poliomyelitis cases among immunized patients.

TABLE 4.—Virologic Findings in Cases of Clinical Paralytic Poliomyelitis and Aseptic Meningitis, California 1956-1960

Laboratory Results	Paralytic Poliomyelitis		Nonparalytic Poliomyelitis, Aseptic Meningitis	
	Number	Per Cent	Number	Per Cent
Totals	706	100	1,259	100
Poliovirus	437	62	85	7
Other enteroviruses	53	7	488	39
Coxsackie A	2	<1	23	2
Coxsackie B	29	4	342	27
ECHO	22	3	123	10
Mumps	13	2	80	6
Herpes simplex	6	1	8	<1
SLE, WEE	1	<1	7	<1
Dual infections	0	0	16	1
Inconclusive	125	18	305	24
Negative	71	10	270	21

Severity of paralysis. The relatively infrequent implication of nonpolioviruses in cases of severe paralytic disease suggested by the foregoing review of published reports is illustrated by the experience in California, which is summarized in Table 3. These data, from a study of clinical poliomyelitis previously published,[2] show that poliovirus and nonpoliovirus infections were each fairly often (12 per cent to 36 per cent) associated with "nonparalytic poliomyelitis" or with "paralytic cases" in which there was only minor paresis. However, with increasing degrees of paralysis or with bulbar involvement, the frequency of nonpoliovirus infections declined sharply. The higher frequency of nonpoliovirus infections in cases in which there was slight to moderate paresis provides supporting evidence of a causal relationship to this type of illness; if these agents merely represented coincidental infections, a more equal distribution in all categories of severity would be expected.

The proportion of laboratory-confirmed poliomyelitis cases became larger with the increasing severity of paresis and with the appearance of bulbar signs, reaching a maximum of about 85 per cent. Even in the categories of severe spinal paralytic or bulbospinal disease, however, there were some cases, particularly in the vaccinated patients, in which no laboratory evidence of poliovirus or of any other infection was elicited.

Overall incidence of nonpoliovirus infections. Without respect to the variables of age, vaccination status, and severity of paresis, the overall occurrence of nonpolioviruses in 706 cases of paralytic disease studied in this laboratory from 1956 to 1960 is summarized in Table 4. For comparison, the findings in 1,259 cases clinically classified as nonparalytic poliomyelitis or aseptic meningitis are also shown. In the group of paralytic cases, poliovirus infection was confirmed in 62 per cent; in 18 per cent it was neither confirmed nor ruled out (*i.e.* virus was not recovered and serologic tests were inconclusive); and in 10 per cent results of all tests were negative. In 73 cases (about 10 per cent) evidence of a current infection with some other virus was elicited. These other viruses included a Coxsackie group B virus in 29 cases (4 per cent), a Coxsackie group A virus in three cases (less than one per cent), an ECHO virus in 22 cases (3 per cent), the mumps virus in 13 cases (2 per cent), the virus of herpes simplex in six cases (1 per cent) and the St. Louis encephalitis virus in one case. Altogether, enteroviruses other than poliovirus were found in about 7 per cent, and nonenteric viruses in about 3 per cent of the paralytic illnesses. In cases clinically diagnosed as nonparalytic poliomyelitis or aseptic meningitis, infections with group B Coxsackie viruses, ECHO viruses, or the mumps virus were each found in a much higher proportion of the illnesses, often exceeding poliovirus infections.

The specific immunotypes of viruses encountered each year in paralytic cases are shown in Table 5. In keeping with the pattern commonly found in the United States, type 1 poliovirus infections (360 cases) greatly exceeded type 3 infections (72 cases), and type 2 infections were infrequent (five cases). The other enteroviruses encountered in-

TABLE 5.—*Specific Viruses Associated with Cases of Clinical Paralytic Poliomyelitis. California 1956-1960*

Type of Virus	Number of Patients, by Year					
	Total	1956	1957	1958	1959	1960
Cases studied	706	272	103	102	138	91
Poliovirus	437					
Type 1	360	156	19	44	83	58
Type 2	5	2	1	2	0	0
Type 3	72	22	19	15	12	4
Coxsackie virus	31					
Type A9	1	0	1	0	0	0
Type A16	1	0	0	0	1	0
Type B2	8	2	1	2	2	1
Type B3	2	1	0	1	0	0
Type B4	7	1	5	0	0	1
Type B5	11	4	2	4	0	1
Type B6	1	0	0	0	0	1
ECHO virus	22					
Type 4	7	5	1	0	0	1
Type 6	4	3	0	0	1	0
Type 9	2	0	0	2	0	0
Type 11	1	0	0	0	0	1
Type 13	1	0	0	0	1	0
Type 14	3	1	1	1	0	0
Untyped	4	2	0	0	1	1
Mumps	13	10	2	1	0	0
Herpes simplex	6	0	4	0	1	1
St. Louis enceph.	1	1	0	0	0	0
Total:						
Nonpolioviruses						
No. of patients	73	30	17	11	7	8
Per cent	10%	11%	17%	11%	5%	9%

cluded Coxsackie virus types A9, A16, B2, B3, B4, B5 and B6, ECHO virus types 4, 6, 9, 11, 13 and 14, and several unidentified ECHO types. With the exception of Coxsackie virus types A16 and B6, and ECHO virus types 13 and 14, all of these viruses previously have been associated by various investigators with cases of paralytic illnesses.

COMMENT

The ubiquitous distribution of Coxsackie and ECHO viruses is well known. These agents have frequently been recovered from apparently healthy persons and have been associated with various clinical syndromes in addition to the disorders of the central nervous system discussed herein. Thus it must be emphasized that the demonstration of infection with one of these agents during the course of illness in a patient with a CNS disorder does not constitute proof of a causal relationship. Etiologic significance in each case must be weighed against the possibility of an adventitious infection unrelated to the current illness.

In our opinion, the reports of several well documented instances of recovery of the virus from the brain or spinal cord of man and the demonstration of neurotropic properties in experimentally infected animals (see above) provide convincing evidence that certain types of Coxsackie and ECHO viruses have the capacity to produce neurologic disease which may clinically simulate poliomyelitis. However, factors such as the possibility of coincidental infection and variability in the frequency of infection with respect to age, severity of disease and previous immunization of the patient against poliomyelitis make it extremely difficult to estimate the overall contribution of known types of "nonpolioviruses" to the occurrence of paralytic disease. If etiologic significance were assumed in every instance, in the recent experience of this laboratory, as described above, viruses other than poliovirus might account for about 10 per cent of the illnesses considered clinically to be cases of paralytic poliomyelitis, predominantly cases with slight degrees of paresis. A similar or lesser frequency of nonpoliovirus infections associated with paralytic illness has been observed by other investigators.[2,12,23] Any correction for coincidental infections would, of course, reduce the number of assumed etiologically significant infections. Thus, while there is substantial evidence that viruses other than poliovirus are the causative agents of illnesses clinically simulating paralytic poliomyelitis, nonpolioviruses have not been demonstrated to be major contributors to the overall occurrence of paralytic diseases in recent years.

ACKNOWLEDGMENTS: Many individuals contributed to the clinical and laboratory studies described herein. The authors particularly wish to acknowledge the assistance of Dr. Henry Renteln of the Bureau of Communicable Diseases, California State Department of Public Health, the cooperation of local health officers throughout California in obtaining clinical records and specimens, and the technical contributions of Dr. Nathalie Schmidt, Miss Anna Wiener, Mr. Tak Shinomoto, Mrs. Florence Jensen and Mrs. Margaret Ota.

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Human Renal Transplantation, II*

A Successful Case of Homotransplantation of the Kidney Between Identical Twins

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• Kidney transplantation between 41-year-old twin men was carried out because of chronic glomerulonephritis in one twin. The operation was successful. Hypertension, edema and azotemia in the patient disappeared after operation and both the donor and the recipient were well.

RENAL TRANSPLANTATION between identical twins, first performed successfully at the Peter Bent Brigham Hospital in Boston in the fall of 1954 as an exciting clinical experiment, is now an accepted procedure, provided the indications are proper and the donor is able to give the kidney without jeopardizing his own life.[8,10]

Approximately 25 transplantations of kidneys between twins have been done since the first successful case in Boston. There have been two successful cases of kidney transplantation between non-identical twins.[10] There have been no permanently successful "takes" of kidney transplantation between persons who are not twins, although Hamburger of Paris recently described a successful case of transplantation of a kidney from mother to son with survival for more than a year.[4] One of the most recent reports of successful kidney transplantation between identical twins is by Woodruff of Edinburgh.[10] An excellent recent review of the literature was prepared by Menville and co-workers.[6]

To the present, so far as we could determine, only three successful kidney homotransplantations have been performed in the Western United States. The first of these was done by Hodges, Murray and Dunphy in Portland in October 1959.[5] The second, done at Stanford in August of 1960, was reported by Cohn and coworkers.[1]

The purpose of this paper is to describe our successful experience with homotransplantation of a kidney between identical twins performed at the University of California Medical Center in Los Angeles on July 15, 1961. Our experiences with non-twin renal homotransplantations are reported elsewhere.[2,3]

REPORT OF A CASE

The subjects, A and B, were 41-year-old, married, white, identical male twins. A, the sick twin, had no previous history of renal disease and no symptoms until about September 1959 when albuminuria and pyuria were first noted at an insurance examination. Subsequently, hypertension, edema and azotemia developed. Since he had rather far advanced renal disease and was known to have an identical twin, he was referred to UCLA for evaluation and consideration for renal homotransplantation.

The patient was admitted for evaluation on three

TABLE 1.—*Renal Transplantation—Identical Twins (Preoperative Studies)*

Clinical Features	Twin A (Recipient)	Twin B (Donor)
Blood pressure	160/100 mm. mercury	115/65
Fundi	Macular star	Normal
Heart	PMI MCL 5th interspace	Normal
Renogram	Decided impairment	Normal
Electrocardiogram	LVH	Frequent PVC's
Hematocrit	26%	47%
Blood urea nitrogen	92.4 mg. %	12.5 mg. %
Serum creatinine	9.0 mg. %	1.0 mg. %
Urine protein	5.8 gm. /24°	None

PMI=Point of maximal impulse; MCL=Midclavicular line; PVC=Premature ventricular contraction; LVH=Left ventricular hypertrophy.

TABLE 2.—*Renal Transplantation—Identical Twins (Preoperative Renal Function)*

Renal Functions	Twin A (Recipient)	Twin B (Donor)
Maximum specific gravity	1.016	1.021
Maximum osmolarity	332 mosm.	723 mosm.
Minimum specific gravity	1.010	1.000
Minimum osmolarity	262 mosm.	133 mosm.
Creatinine clearance	9.9 ml./min.	119 ml./min.
Insulin clearance	10.0 ml./min.	105 ml./min.
Para-aminohippuric acid clearance	19.9 ml./min.	492 ml./min.
Phenolsulfonphthalein 15'	1%	45%
total	7%	77.5%

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*This is the second of three articles on this subject.[2,3]

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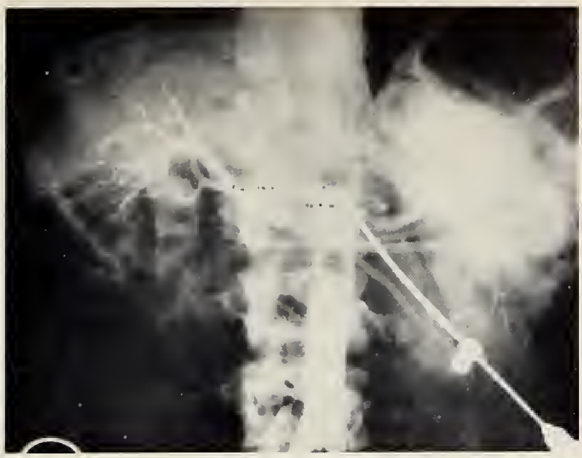

Figure 1.—Aortogram of donor. Note duplication of left renal artery and small polar artery on the right side with fairly normal right renal artery. This information led to decision to use the right kidney of the donor.

occasions before transplantation was finally carried out. On one admission digitalization was carried out because of congestive heart failure due to rapidly advancing hypertension. Laboratory studies showed hemoglobin of 6.8 grams per 100 cc., serum creatinine of 9.0 mg. per 100 cc., and he had mild acidosis with a carbon dioxide combining power of 17.9 mEq. An electrocardiogram was interpreted as showing left ventricular hypertrophy (see Table 1).

Historical and photographic evidence suggested that the twins were identical. In blood cross-matching of the patient with his brother, ten groups agreed exactly. Finger prints were almost identical and crossgrafting of skin was successful. The twins had identical defects in color vision, and both were nonreactive to phenylthiocarbonamide.

The sick twin's maximum urinary concentration was 1.014 specific gravity with an osmolarity of 332. Addis counts showed 200,000 casts, 16 million white blood cells and 298 million red blood cells. Phenolsulfonphthalein excretion was 2 per cent in two hours. Creatinine clearance was 9.9 cc. per minute and inulin clearance was 10 cc. per minute. Para-aminohippuric acid clearance was 19.9 cc. per minute. A radioactive renogram showed decided bilateral impairment (see Table 2). Renal biopsy was not done. The clinical diagnosis was chronic glomerulonephritis.

At the time of admission for transplantation on July 14, Twin A had a serum creatinine level of 12.7 mg. per 100 cc.

After transfusion of several units of packed red blood, the patient was considered ready for transplantation of a kidney from Twin B, who meanwhile had been studied extensively. Results of renal function studies were considered to be normal. On one occasion he was found to have some red blood cells in the urine. Because of concern over this, it was decided to do a needle biopsy of his right kidney. The biopsy was considered normal.

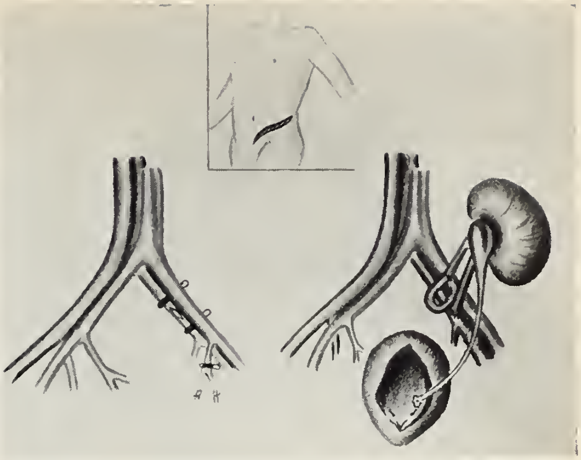

Figure 2.—Technique of transplantation of right kidney of donor to left iliac fossa of recipient. The renal artery, which was posterior in the normal position, now lies anteriorly to match the position of the hypogastric artery in relation to the iliac vein. Note end-to-end anastomosis of hypogastric artery to renal artery and end-to-side anastomosis of renal vein to iliac vein.

In order to check the blood supply of the kidneys an aortogram was performed at the time of admission for evaluation. It showed that he had duplication of the renal arteries on the left side in such a way as to require a double anastomosis of two relatively small arteries. On the right side there was a large main renal artery and a tiny lower polar artery which seemed insignificant (Figure 1). Because of this, we elected to use the right kidney of the donor and to place it in the left hypogastric fossa of the recipient.

Operation

Two teams worked in adjacent rooms. One team removed the right kidney from the donor and the other team prepared the recipient. In general, the technique followed was that originated by Hume and Murray and the Peter Bent Brigham group, in which the kidney is placed in the iliac fossa of the recipient on the opposite side from which it was removed from the donor.

Heparin was not used. After the kidney was removed from the donor, it was placed on a cold, wet towel in a bath of iced saline solution. It is believed that refrigeration protects the kidney during the period of ischemia.

The recipient was prepared by approaching the left iliac area through a low transverse abdominal incision. The left hypogastric artery was dissected

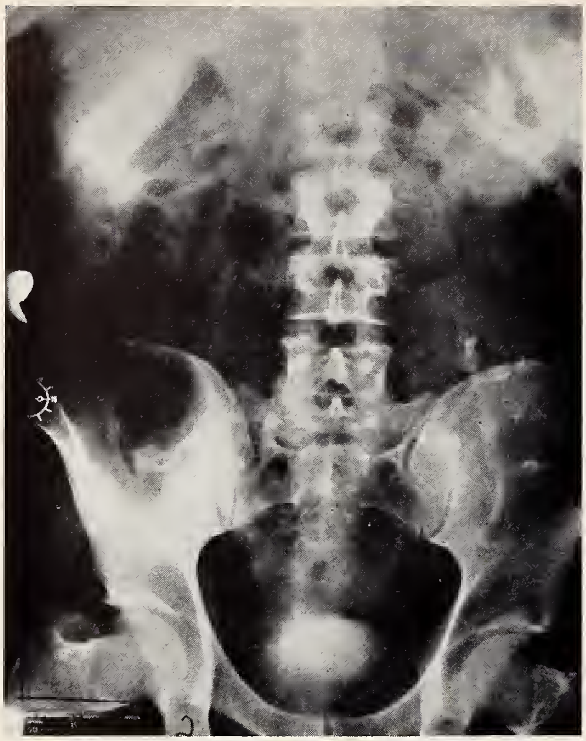

Figure 3.—Postoperative intravenous pyelogram showing transplanted kidney lying in the left iliac fossa.

free with all its branches, which were ligated and transected. When it was demonstrated that the donor kidney had in fact only one major artery, the excess branches of the hypogastric artery were excised; and end to end arterial anastomosis between the left hypogastric artery and the renal artery was done. The renal vein was joined to the left iliac vein, end to side (Figure 2).

Owing to technical difficulty caused by the presence of an arteriosclerotic plaque, the arterial anastomosis had to be repeated twice. The total time of renal ischemia was 106 minutes. However, the procedure was ultimately successful and a copious output of urine began shortly after the blood supply was restored—375 cc. in the first twenty minutes.

The ureter was joined to the bladder by a tunnelling technique. A splinting ureteral catheter and a cystostomy tube were brought out through the suprapubic incision. The kidney was placed above the bladder and to the left in the hypogastric fossa behind the peritoneum (Figure 3). Before closure was completed, the kidney was partially decapsulated by making cruciate incisions in the capsule. This was done to diminish the effects of postoperative edema within the tight renal capsule. There was minimal bleeding.

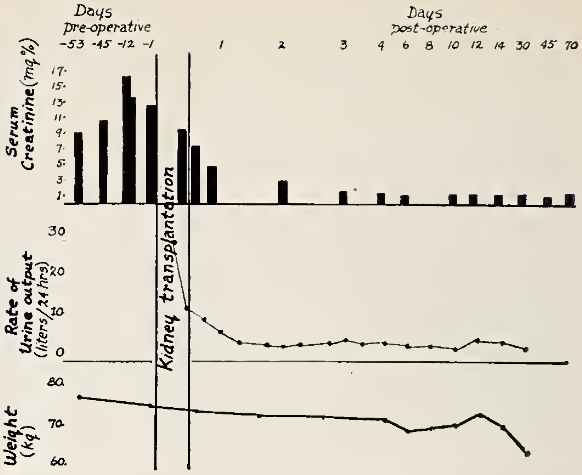

Chart 1.—Changes in serum creatinine and urine flow.

The initial postoperative course of both patients was interesting. The recipient had pronounced diuresis with concomitant weight loss. He excreted 9550 cc. of urine from the ureteral catheter in the first 24 hours. The serum creatinine fell from 12.7 mg. per 100 cc. immediately after the operation to 9.3 mg. after four hours, 4.8 mg. after 18 hours and 1.75 mg. per 100 cc. 72 hours after the procedure (Chart 1). Fluids and electrolytes were replaced intravenously according to serum and urine determinations. Immediately after the operation serum calcium was 4.1 mEq. per liter and phosphorus 11.3 mEq. Within 72 hours, the serum calcium was 4.43 mEq. and the serum phosphorus had fallen to 1.3 mEq. (Chart 1). Severe left flank tenderness and fever developed in the recipient. It was thought that the tenderness was due to obstruction of the remaining left ureter and kidney. Phensolsulfonphthalein clearance from the transplanted kidney on the fourth postoperative day was 30 per cent in two hours. Later it rose to 50 per cent.

Pulmonary infarction developed in both twins, mild in the right lower lobe of the donor and more extensive in the left lower lobe of the recipient. Otherwise the donor's recovery was uneventful. Despite maintenance of anticoagulant therapy, deep thrombophlebitis developed in the left leg of the recipient, possibly related to obstruction of the iliac vein during the time of transplantation. A wound abscess developed and was subsequently drained. The patient was discharged from the hospital in good condition on August 17, 1961.

The recipient was readmitted on September 1, six weeks after the transplantation. Both of his own diseased kidneys were removed simultaneously by means of a posterior approach with the patient in the prone position. They were extensively damaged with advanced glomerulonephritis.

TABLE 3.—*Renal Transplantation—Identical Twins (Recipient, Before and After Transplantation)*

Renal Functions	Preoperative	Postoperative
Maximum specific gravity	1.016	1.020
Maximum osmolarity	332 mosm.	684 mosm.
Serum creatinine	9.0 mg. %	1.1 mg. %
Creatinine clearance	9.9 ml./min.	56 ml./min.
Phenolsulfonphthalein 15'	1%	15%
total	7%	35%
Hematocrit	26%	48%
Urine protein	5.8 gm. /24°	0.1 gm. /24°

On the right side the twelfth rib was removed for better exposure, and thus fortuitously the recipient again resembled his identical twin brother, whose twelfth rib was removed at the time of nephrectomy when he gave the "donor kidney."

Subsequently renal function studies showed the function to be the same in the two kidneys, one in each twin. The hypertension of the patient disappeared.

The donor developed a peptic ulcer which responded to medical management. One may speculate as to the role of surgical stress in this event.

Both twins are now in excellent health and have resumed their normal lives, and are back at work in their photography shops. The prognosis of the previously doomed patient should be excellent.

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Criteria for Blood Transfusions

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• A review of the use of blood transfusions used in a small community hospital over a two-year period revealed a high incidence of instances in which the clinical record did not show essential need for the procedure. Educational efforts in hospital staff meetings resulted in some improvement in this respect during the two-year period. Of single unit transfusions given during the first year, 80 per cent were deemed to have been nonessential; during the second year, 52 per cent.

Methods which will reduce the use of blood except when it is essential are (1) continuation of staff education; (2) providing the staff with accurate methods of measurement of blood volume and of monitoring blood loss; (3) use of a separate blood transfusion chart in the patient's hospital record; and (4) establishment of a hospital transfusion committee to review the criteria in all cases in which blood is transfused.

THE MORTALITY from blood transfusions ranks with that from appendicitis or anesthesia. Approximately 3,000 deaths result from the 3.5 million transfusions given each year in the United States.[2] In light of the accumulating evidence of hazard, the possible benefit must be weighed against the danger in each case. It is apparent therefore that more exact definition of criteria for blood transfusion should be established in the minds of physicians. Recognition that there are medical and legal hazards involved in the use of blood transfusions stimulated the authors to make a study of the use of blood in a 100-bed community hospital over a two-year period.

Objectives of this project were: (1) To see how often blood was transfused when it was not truly essential; (2) to provide educational data to the medical staff on the subject of indications and dangers of blood transfusions; (3) to stimulate the use of improved scientific methods as an aid in the determination of the necessity for use of blood transfusion; and (4) to establish mechanisms of improved controls in the use of blood transfusions if the study should show the controls were needed.

METHOD

A survey of blood transfusions administered in a 100-bed hospital over a one-year period (1959-1960) was made by a two-man team using medical, surgical, obstetrical, anesthetic and laboratory records from patients' hospital charts. One-unit, two-unit and three or more unit transfusions were compared by incidence and apparent need. Results of this survey were presented to the hospital medical staff in conjunction with a program designed to emphasize the indications, contraindications and complications of blood transfusions. A second one-year survey (1960-1961) was then begun and verbal references to this study were repeated at monthly hospital staff meetings to maintain continued awareness of the problems related to blood transfusions. Results of the two periods were then compared.

The transfusions of this study were divided into three groups, one-unit, two units, and three or more units. Each of these groups was further subdivided into three categories—emergency, homeostasis, and nonessential—according to the apparent indications for transfusion as determined from analysis of the clinical records. The "emergency" group included all transfusions deemed necessary to preserve life by supporting circulating blood volume and/or enhancing oxygen-carrying capacity, and also all transfusions used in cases of acute, uncontrolled loss of blood in which the extent of the immediate loss and the probable further loss could not be estimated. Excluded from this group were cases in which oxygen-carrying capacity was considered to be adequate and the circulating volume could have been restored by using plasma expanders. The cases grouped under "homeostasis" included those in which blood transfusion was not an emergency procedure but was necessary to maintain health, a plasma expander being inadequate. This group included use of blood in supporting patients with uremia, leukemia or wasting and neoplastic diseases. Cases in which a plasma expander could have been used instead of blood if the circulating volume had to be increased were included in the "nonessential" group. This category also included cases in which indications for blood transfusions were not stated in the patient's chart and were not recognized upon review of the clinical record. Some 48 per cent of the series were so classified.

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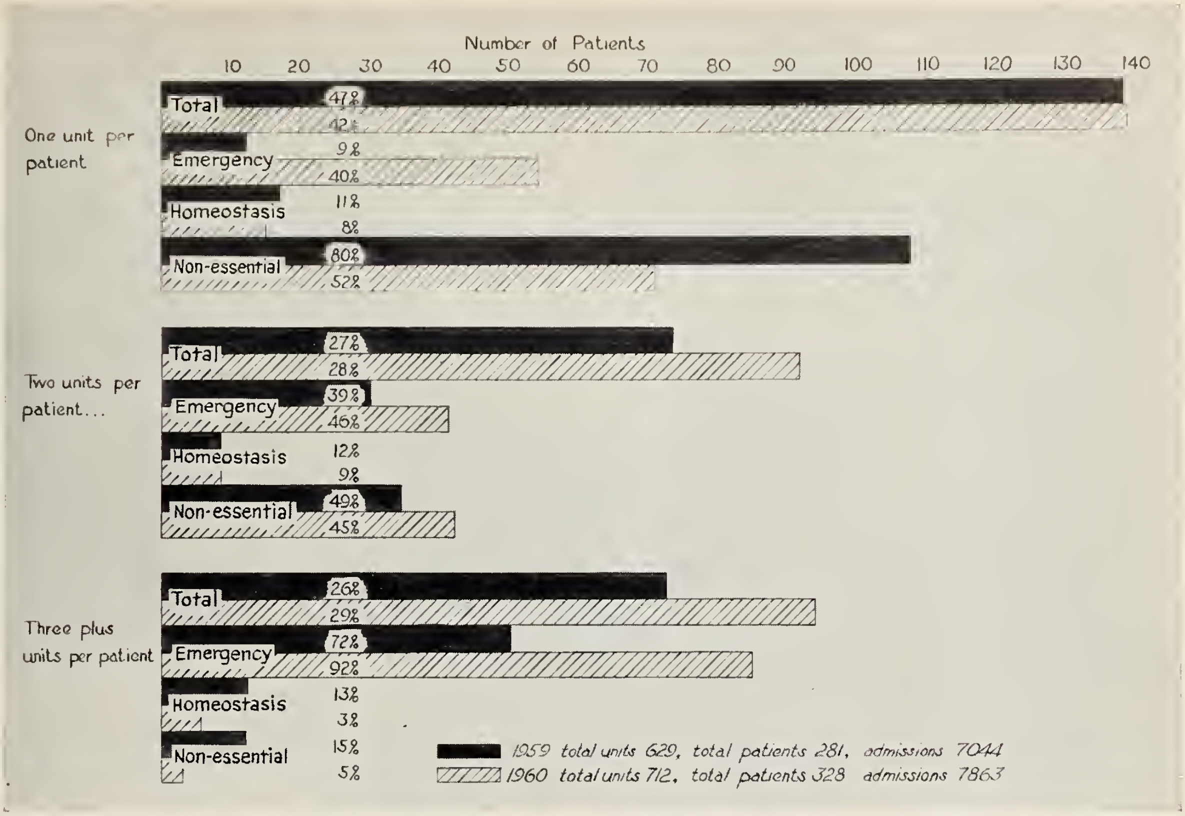

Chart 1.—Transfusions in three categories (one unit, two units, three or more units) related to three classifications of need for blood (emergency, homeostasis, nonessential) as determined from review of records over a two-year period.

RESULTS

In the first of the two years reviewed, single unit transfusions made up 47 per cent of the total; in the second year, 42 per cent. Of the single unit transfusions, 9 per cent of the first year's and 40 per cent of those in the second year were deemed to have been of an "emergency" nature and therefore essential, indicating an improvement in standards for the use of blood transfusions between the first year and the second. Improvement of this order also occurred in the two-unit and in the three or more unit groups. (See Chart 1.)

DISCUSSION

For the most part the justifiable purposes of blood transfusions are: (1) To maintain or increase the volume of circulating blood; (2) to improve or maintain the oxygen-carrying capacity of circulating blood; (3) to replace toxic circulating blood, i.e., exchange transfusion; and, (4) to enhance blood coagulation. In most instances the use of blood for maintaining or increasing the circulating volume should be reserved for cases requiring two or more units. It has been observed that acute losses of 1,000 to 1,500 cc. of blood in previously normal adults can be compensated by use of plasma expanders if bleeding can be stopped.[7] Since spontaneous reestablishment of hemoglobin begins soon after bleeding in most cases, the amount increasing approximately 0.1 to 0.3 grams per 100 cc. per day,[5] the patient can be expected to be considerably improved by the time of discharge, without ever having had blood by transfusion.

Some surgeons have expressed the view that healing will be more rapid if hemoglobin levels are maintained within the normal range, but the authors know of no convincing evidence in support of this belief. Many surgeons and anesthetists believe that a long operation is in itself an indication for whole blood transfusion, that all patients with symptoms of shock and blood loss need whole blood and that it is unsafe for a mildly anemic patient to have a major operation without previous transfusion of blood to elevate the hemoglobin. Many also believe they are quite accurate in estimating the loss of blood during an operation. In general, these are misconceptions. Wilson and Adwan[9] reported that of 100 consecutive patients with benign ulcers of stomach, duodenum or gastroenteric stoma undergoing elective partial gastrectomy for reasons other than recent severe bleeding, only two required blood transfusion during the operation and none needed it afterward. Crosby[1] indicated that if the volume of blood is normal a hemoglobin level of 7 grams per 100 cc. is sufficient for tissue oxygenation in most situations during an operation. Macdonald[4] remarked that a patient with a hemoglobin concentration of 11 grams per 100 cc. before operation would usually be safer in donating a pint of blood than in receiving one.

The question of the use of blood to improve oxygen-carrying capacity in an anemic patient is greatly complicated by the many variables that enter into calculating the degree of anemia. While there are differences in the specific needs of each patient, physicians should acquaint themselves with the "normal" hemoglobin values for various age groups of each sex in their geographical area. For example, the usual hemoglobin level for young housewives in the sea level community dealt with in the present study ranges between 10.5 and 13.5 grams per 100 cc. In young men of that age group it ranges from 12.5 to 16.0 grams per 100 cc. Judy and Price[3] reported a mean hemoglobin content of 12.55 grams per 100 cc. in 663 "normal" women in the Spokane, Washington, area which is at an altitude of about 2,000 feet. It should be emphasized that a single unit of blood will increase the hemoglobin only 1.0 to 1.5 grams per 100 cc.[5]

The possible benefit must be weighed against the hazards—hepatitis, bacteremia, transfusion reaction, allergic reaction, sensitization. Anemia not connected with surgical operation or traumatic bleeding is also sometimes an indication for transfusion. However, again considering the hazards, it is often advisable to allow enough time for hematopoiesis to make up the deficit under appropriate therapy. Indeed, transfusion is seldom necessary in the treatment of "medical" anemia. The usual changes in hemoglobin levels during and following pregnancy should be borne in mind, for giving whole blood in such circumstances may set the stage for subsequent transfusion reactions or erythroblastosis fetalis. Special hazards attend the use of blood transfusion to treat anemia in patients with such complicating conditions as congestive heart failure, myocardial infarction, hypertension and hepatic coma.

Inaccurate hemoglobin determination can lead to prescribing blood where it is not essential. In one hospital where an error of 2.0 grams (low) was being reported by the laboratory an estimated 1,000 patients in a one-year period were given transfusions that otherwise would not have been prescribed.[5] While office procedures for hemoglobinometry may be adequate for screening, transfusion should not be considered in any elective situation until hemoglobin determinations have been carried out by a laboratory using accurate standards and quality control.

The use of plasma substitutes for colloidal maintenance of blood volume does not receive the attention it deserves. Sayman and Allen[7] said that patients requiring only one or two units of blood should probably receive a colloidal substitute. Morton[6] observed from data obtained in a six months survey that 34 to 72 per cent of single unit transfusions had not been essential. He believed that blood had been given without adequate reason: (1) To improve wound healing; (2) to replace loss of blood in small amounts; (3) to relieve emotional instability; (4) because of hypotension clearly associated with anesthetic or analgesic drugs; (5) during operation, and, (6) before operation to patients with anemia, most of whom had iron deficiency.

CONCLUSIONS

1. Further education is needed in the employment of blood transfusions.

2. A rapid, practical, inexpensive method for determination of blood volume and to monitor blood loss. This requirement is met in our laboratory by the use of the "Volemetron,"*[8] employing radioactive iodine-labeled albumin.

3. A standard blood transfusion chart should be available for the patient's hospital record. This is necessary because often there is no adequate record of data that later can justify the use of blood transfusions. Although the need for this therapy may have been apparent to the physician at the time, the absence of an adequate record might result in a dire legal complication should damage to the patient result from the use of blood. The separate record sheet may serve as a reminder to the physician of the dangers of blood transfusion and also be of value later should there be need to review the record.

4. Hospitals should have transfusion review committees to: (a) review records for indications in cases in which transfusions are used; (b) support and encourage educational efforts in the proper use of blood transfusions; and, (c) maintain vigilance over laboratory methods of hemoglobinometry, blood typing, cross-matching, and the handling and identification of blood to insure accurate reports and maximum safety from laboratory error.

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*The "Volemetron," manufactured by the Atomium Corporation, Waltham, Massachusetts.

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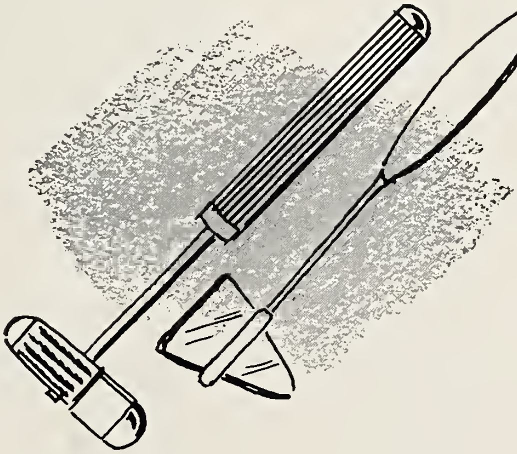

Transfusions

Hazardous Acid-Base Changes with Citrated Blood

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• In a study of the acid-base changes in the blood of rabbits during and following transfusions of citrated blood and of heparinized blood, it was observed that, with citrated blood, pH decreased and carbon dioxide tensions rose. With heparinized blood, the acid-base balance was maintained within normal limits following transfusions.

The potential hazards of rapid massive citrated blood transfusions in the anesthetized patient during operation must be kept in mind.

ALTHOUGH the extreme acidity of citrated blood is well-known,[1,6,7,11,12] the effect of this acidity on the acid-base status of the recipient has not been satisfactorily defined. Our interest was aroused by the number of ill newborn and young infants who received acid blood during surgical operation and who had respiratory or metabolic acidosis or both.[13] The present study is an attempt, for purposes of comparison, to observe the acid-base changes in the recipient's blood during the administration of heparinized blood.

That fresh heparinized blood is superior clinically to stored blood is indicated by lower morbidity and mortality following its use.[4,16,19,20] In open heart operations in which extracorporeal circulation is used, heparinized blood has been useful in minimizing cardiac complications and improving maintenance of acid-base balance.

METHODS

Rabbits ranging in weight from 2.5 to 2.95 kg. (5.5 to 6.5 lb.) were used in this study. Under intravenous sodium pentobarbital anesthesia, 10 mg. per pound of body weight, and local infiltration with 1 per cent lidocaine, intubation was accomplished through tracheostomy to meet the adjustments in ventilation planned for the experiment. The left femoral vein and artery were cannulated for venous and arterial pressure recording. The right femoral artery was used for bleeding, transfusion and sampling. A Gilson four-channel recorder was used to monitor venous pressure, arterial pressure, electroencephalograms and electrocardiograms. The end-tidal carbon dioxide concentration was continuously sampled by attaching a catheter from the endotracheal tube to a Beckman rapid infrared carbon dioxide analyzer.[5] A respirator of the Harvard piston-type was used with room air when controlled ventilation was employed. The pH was measured with the Astrup microradiometer.[3] From samples equilibrated with known concentrations of carbon dioxide, standard bicarbonate, tension of carbon dioxide (P_{CO_2}), buffer base and base excesses were calculated from the Astrup nomogram.[2,17]

A sufficient interval was allowed between the preparation of the animal and the actual experiment to attain regular respirations, stable blood pressure and cardiac rate.

Since respiration is an important and rapidly responsive mechanism in the control of acid-base balance, the transfusion studies were done under varied conditions of ventilation. Animals in each group were transfused during hyperventilation and during spontaneous unassisted respiration. The changes in respiration were related to the acid base metabolism. The average respiratory rate, tidal volume (VT), and minute volume were compared with the reported normal values for rabbits.[9]

For ease in collection and transfusion, 10 ml. syringes were used. Appropriate amounts of acid-citrate-dextrose (ACD) solution per syringe were determined according to the proportions recommended by the American Red Cross (120 ml. of ACD to 500 ml. of whole blood). Heparin syringes were prepared by flushing the syringe with fresh heparin solution, (10 mg. per ml.), and then filling the dead space with heparin. Using an estimated blood volume (EBV) of 57.3 ml. per kg. of body weight,[8] each animal was bled from the femoral artery in an amount equal to 30 to 40 per cent of its EBV. In order to avoid severe changes in the acid-base status from prolonged shock, no more than three to five minutes was permitted to elapse between bleeding and transfusion.

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Submitted November 29, 1961.

Transfusions were also given arterially. Arterial blood samples were drawn in heparinized 1 ml. syringes (1) before blood was removed, (2) after bleeding, (3) before transfusion, (4) immediately after transfusion and (5) every ten minutes thereafter for 40 minutes. From data in Table 1 it is apparent that the heparin solution in the sampling syringes was less acidotic than ACD solution.

The four categories of experiments and the conditions under which citrated blood and heparinized blood was given were as follows:

Group I. Rapid ACD blood transfusions
Hyperventilation with room air
Group II. Rapid heparinized blood transfusions
Hyperventilation with room air
Group III. Rapid ACD blood transfusions
Spontaneous unassisted respiration
Group IV. Rapid heparinized blood transfusions
Spontaneous unassisted respiration

RESULTS

Group I. *Rapid ACD blood transfusion; hyperventilation with room air.*

(The subjects were five rabbits with an average weight of 2.72 kg. (6.0 lb.) prepared in the manner already described. Hyperventilation to approximately one and a half to two times the resting minute volume was produced. Minute volume (MV) was determined from the respiratory rate, and tidal volume was measured with a British Oxygen Company spirometer. Relaxation was obtained when necessary with intramuscular succinylcholine.)

Chart 1 shows that the average blood pressure, standard bicarbonate, P_{CO_2}, and pH values from each animal were quite consistent.

Shortly before the rabbits were bled, the average pH was 7.468, P_{CO_2} 33 mm. of mercury, standard bicarbonate 12 mEq. per liter. Blood pressure declined as the total blood volume diminished. The end-tidal CO_2 tracings (Chart 2) reflected changes in the pulmonary circulation as the blood volume diminished—that is, low end-expired CO_2 indicated reduced cardiac output.[14,15] Blood pressure (Chart 1) varied directly with blood volume throughout the experiment, being normal before bleeding and returning to normal with restoration of the blood volume.

Immediately after transfusion with citrated blood, arterial P_{CO_2} rose to 52 mm. of mercury, pH declined to 7.25 and standard bicarbonate to 9.4 mEq. per liter. Three minutes later, the P_{CO_2} dropped to 35 mm. Hg. and the pH increased to 7.31. Within approximately 40 minutes, P_{CO_2}, pH and standard bicarbonate returned to control values. Immediately after the administration of citrated blood, end-tidal

TABLE 1.—***Effect of acid-citrate-dextrose solution (ACD) and of heparin on pH of blood. Left hand column shows low pH of blood from five rabbits in syringe which contained ACD as anticoagulant. Right hand column shows normal pH in syringe which contained heparin.***

	ACD Blood	Heparinized Blood
No. 1	6.680	7.441
	6.820	7.475
	6.700	7.505
	6.778	7.515
No. 2	6.005	7.339
	6.240	7.342
	6.156	7.364
	6.159	7.404
No. 3	6.708	7.500
	6.715	7.545
	6.791	7.465
	6.725	7.421
No. 4	6.806	7.390
	6.775	7.375
	6.830	7.475
	6.755	7.434
No. 5	6.690	7.510
	6.700	7.491
	6.790	7.542
	6.756	7.585

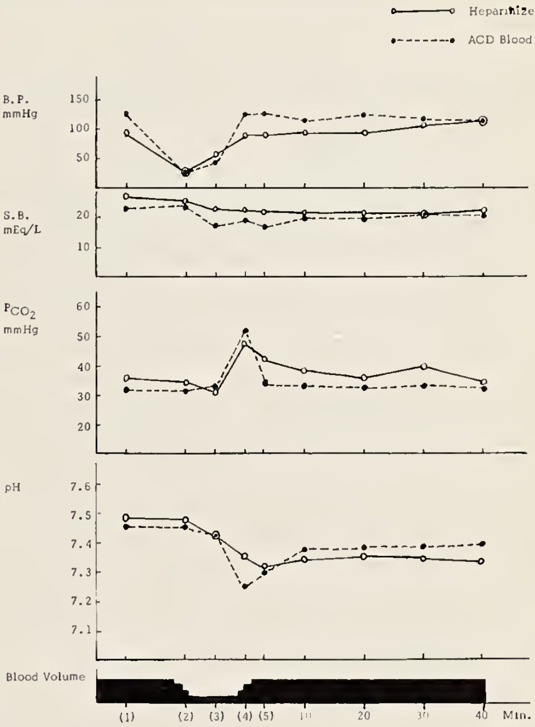

Chart 1.—Changes in blood pressure (B.P.), standard bicarbonate (S.B.), P_{CO_2} and pH of the arterial blood when uniformly hyperventilated animals are bled and then transfused with citrated or heparinized blood. (Values are averages.)

Explanation of numbers under blood volume: (1) Before removal of blood, (2) immediately after blood removed, (3) five minutes after blood removed, (4) immediately after blood transfusion, (5) three minutes after blood transfusion.

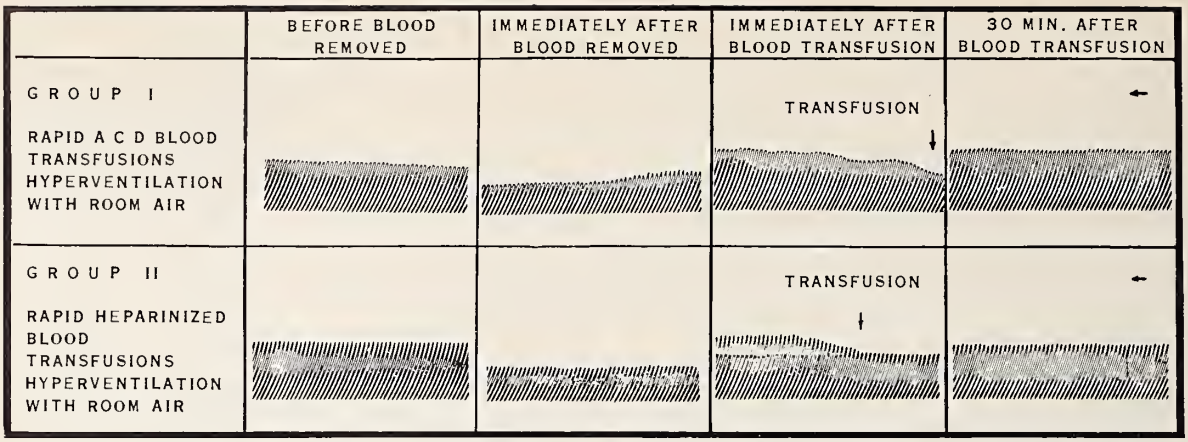

Chart 2.—Read each tracing right to left. Changes in end-expired carbon dioxide concentrations. The lower the amplitude, the lower the end-expired carbon dioxide. Removal of blood lowers end-expired carbon dioxide due to decreased cardiac output.[14,15]

CO_2 increased (Chart 2) in association with the pronounced rise in P_{CO_2} and leveled off in less than three minutes, the change coinciding with the drop in P_{CO_2} and increase in pH.

Group II. *Rapid heparinized blood transfusions; hyperventilation with room air.*

Five rabbits with an average weight of 2.69 kg. (5.9 lb.) were used. The procedure was that essentially followed in Group I.

Soon after bleeding, there was only a slight increase in arterial P_{CO_2}. Administration of heparinized blood produced only a slight decline in pH, a slight increase in P_{CO_2} from 36 mm. Hg. to 49 mm. Hg. and a slight decrease in standard bicarbonate (Chart 1).

Bleeding caused a fall in end-expired carbon dioxide due to decreased pulmonary blood flow[14,15] (Chart 2). Transfusion with either citrated or heparinized blood caused an immediate rise in end-expired CO_2. In Group I, ACD blood gave a rise in end-expired CO_2, presumably because of increased excretion of CO_2 into the lungs and increased pulmonary blood flow. In Group II, the rise in end-expired CO_2 was probably largely due to increased pulmonary blood flow. Thirty minutes following transfusion with citrated or heparinized blood, the end-expired CO_2 had returned to normal.

Group III. *Rapid ACD blood transfusions; spontaneous unassisted respiration.*

Five rabbits with an average weight of 2.36 kg. (5.2 lb.) were studied. Throughout the procedure, respirations were spontaneous and unassisted. Changes in rate and depth were closely observed and related to acid base changes. Chart 3 shows changes in the average respiratory rate, blood pressure, standard bicarbonate, P_{CO_2} and pH.

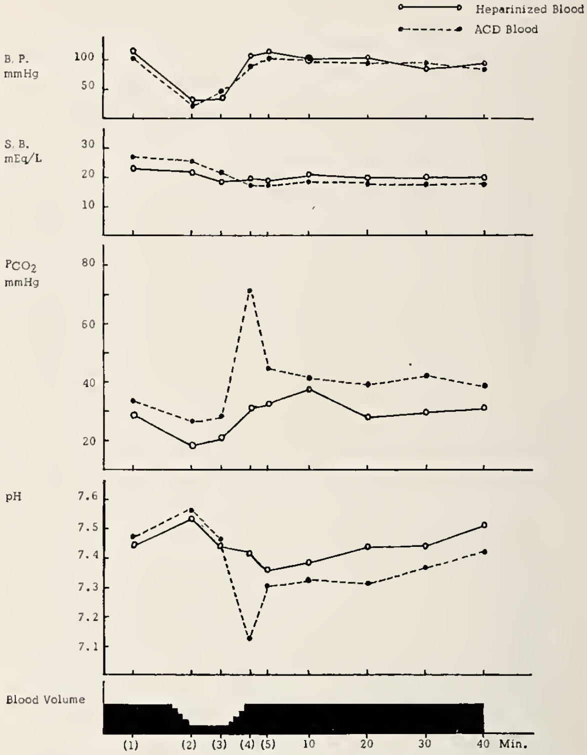

Chart 3.—Changes in blood pressure, standard bicarbonate, P_{CO_2} and pH of arterial blood when spontaneously breathing animals are bled and then transfused with citrated or heparinized blood.

Explanation of numbers under blood volume: (1) Before removal of blood, (2) immediately after blood removed, (3) five minutes after blood removed, (4) immediately after blood transfusion, (5) three minutes after blood transfusion.

Before bleeding, the respiratory rate was slightly less than normal values given for rabbits, probably because of the barbiturate depression. The P_{CO_2} and standard bicarbonate were also slightly below normal. However, pH (7.46) was normal. These animals had a mild compensated metabolic acidosis due to dehydration and starvation.

Bleeding was followed by an increase in the respiratory rate. The end-expired CO_2 concentration was diminished, probaby resulting from a combination of hyperventilation and diminished circulating blood volume. A slight further decrease in P_{CO_2} was noted, and a pH shift to the alkaline side (7.56) followed.

Immediately after transfusion, the respiratory rate was twice the pretransfusion rate, the pH dropped to 7.12, and the P_{CO_2} increased to 70 mm. Hg. The end-expired CO_2 concentration was low, because of compensatory hyperventilation.

After three minutes, the respiratory rate was greatly diminished and the acid-base balance was similar to that before transfusion. Compensation was attained in a very short period, seemingly through respiratory mechanisms which were not dangerously obtunded by deep anesthesia.

Acid-base equilibrium was maintained for 20 to 30 minutes very close to that immediately following transfusion. The pH was slightly lower and the P_{CO_2} slightly higher than before ACD transfusion.

Group IV. *Rapid heparinized blood transfusions; spontaneous unassisted respiration.*

Five rabbits with an average weight of 2.5 kg. (5.5 lb.) were studied. As in Group III, respirations were spontaneous and unassisted.

The acid-base balance (Chart 3) before bleeding was well within normal limits.

Bleeding induced changes (Chart 3) in blood pressure, pH, P_{CO_2} and standard bicarbonate similar to those in the previous groups—hypotension, hyperventilation and slight respiratory alkalosis. Within five minutes of hypotension, compensatory changes had begun.

When blood volume was restored with heparinized blood in a rabbit breathing spontaneously (Chart 3) there was a similar rise in blood pressure and considerably less depression of pH and less elevation of P_{CO_2} than occurred after transfusion with citrated blood. Thus, during transfusion with heparinized blood, spontaneous respiration in the anesthetized rabbit can maintain pH of the blood within normal range.

DISCUSSION

Acid-citrate-dextrose (ACD) solution used as an anticoagulant and a preservative is an extremely acid solution with a pH of 4.85 to 5.0.[7,13] Whole blood drawn in citrate solution has a pH range of 6.4 to 6.9. This acidity may be attributed to the citric acid-sodium citrate plus increasing amounts of lactic acid from the breakdown of dextrose.

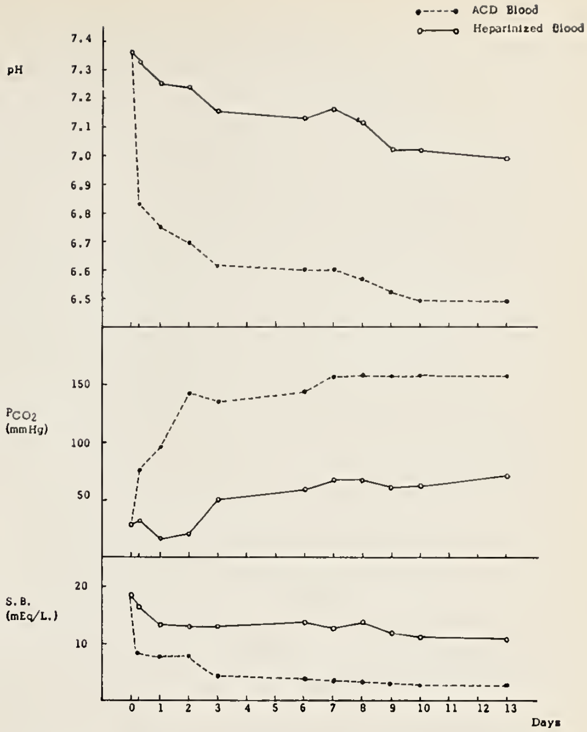

Chart 4.—Stored ACD blood shows severe fall in pH, rise in P_{CO_2} and loss of standard bicarbonate during first day following collection. Stored heparinized blood shows a gradual increase in acidity over 13 days.

Previous reports as to the diminished pH and increased P_{CO_2} of stored citrated blood have been confirmed in our laboratory[1,7] (Chart 4).

In transfusions of 500 to 1,000 ml. in an adult whose renal and respiratory compensatory mechanisms are intact, changes in the acid-base balance may not be apparent. In an infant whose blood volume may easily be replaced once or twice (as in exchanged transfusions or major operations with severe blood loss) or in an adult undergoing extensive surgical treatment and requiring replacement of a large amount of blood, deranged acid-base balance may be obvious and clinically important.

Chart 5 shows the respiratory rate, venous pH, P_{CO_2}, and standard bicarbonate of a six-hour-old newborn subjected to an exchange transfusion using citrated blood approximately a week old, with pH 6.55, P_{CO_2} more than 200 mm. Hg. and standard bicarbonate below 6 mEq. per liter. Determinations were made from umbilical vein samples obtained before, during and immediately after exchange transfusion. A peripheral venous sample was checked one hour after the procedure. As in the animal experiments, there was an increase in P_{CO_2}, decrease in pH, and minimal, if any, decrease in standard

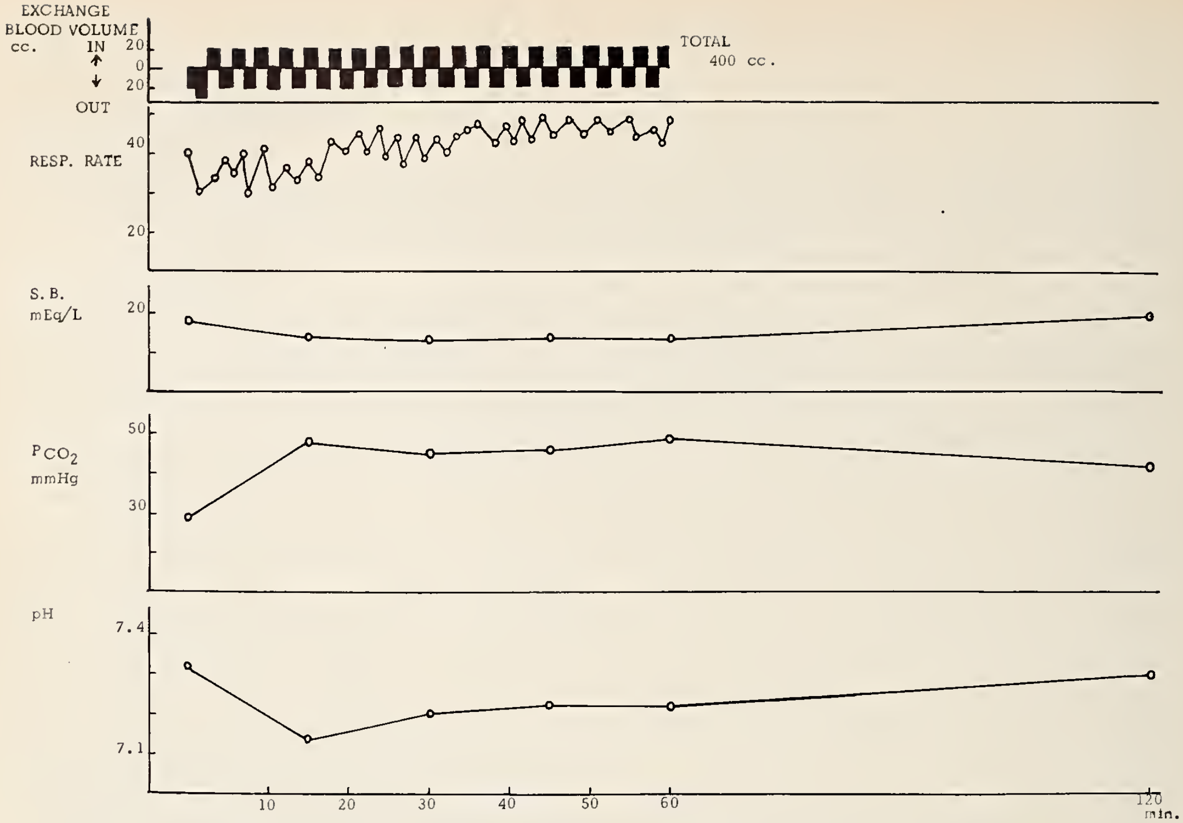

Chart 5.—Blood chemistry during exchange blood transfusion in newborn with ACD blood. S.B.=Standard bicarbonate.

bicarbonate during the period of exchange transfusion. An over-all increase in respiratory rate was also noted during the procedure, increasing with each individual injection of blood. All determinants except respiratory rate returned to pretransfusion levels gradually during the next hour.

As a volatile acid, carbon dioxide is eliminated through the lungs. A slight to moderate increase in the CO_2 and decrease in pH of the blood stimulates the respiratory center, this being manifested as an increase in rate and depth of respiration until the excess carbon dioxide is blown off. This mechanism probably accounts for the increase in respiratory rate observed in the group of rabbits that received citrated blood and in the neonate given an exchange transfusion.

The pH of heparinized blood was shown to be within normal limits and storage altered the pH much less than it did in citrated blood (Chart 4). Hyperventilated rabbits that received heparinized blood transfusions did not show decided changes in pH and Pco_2, whereas hyperventilated rabbits that received citrated blood transfusions showed a drop in pH and elevation of Pco_2.

Thus, aggravating effects can be foreseen in a patient with pre-existing acidosis who receives transfusions of citrated blood. Respiratory acidosis may be heightened if hypoventilation persists or if CO_2 diffusion is impaired. Metabolic acidosis may be worsened if the alkali reserve is severely depleted or exhausted. The effect of increased acidity (low pH) and increased Pco_2 on the myocardium must also be considered. Previous reports by other investigators[10] and results in our laboratory indicate that myocardial contractile force may be diminished, an effect which may help explain the increased morbidity and mortality rates following transfusions of citrated blood.

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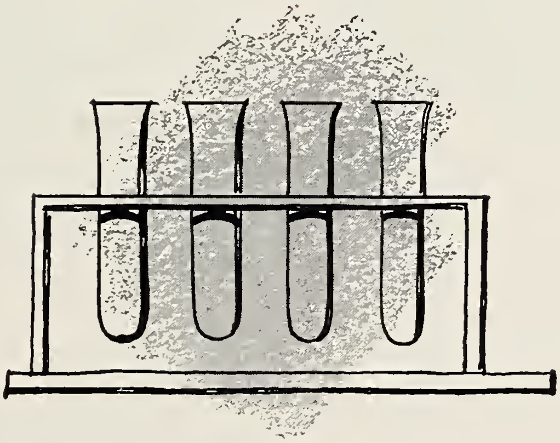

Care of the Umbilical Cord in the Newborn

A Program to Reduce Infection and Promote Healing

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PATRICIA A. RYAN, Major, *A.N.C.*, and ELLEN MASTROIANNI, Major, *A.N.C.*,
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• Problems related to infection, slow-healing and continued moisture of the umbilical cord stump were considerably reduced at an Army Hospital nursery by a program of meticulous care that included shortening the stump, exposure to air (sometimes with added heat) and application of povidone-iodine solution.

ATTENTION WAS FOCUSED on care of the umbilical stump of newborn infants at U. S. Army Hospital, Fort Ord, when we noticed that mothers were repeatedly calling for advice with regard to infection at that site. How to reduce the incidence of infection became our concern.

Since the nursery for some time had been free of clinical infection, mainly impetigo and diarrhea, no additional bacteriological study was made of the environment or of contamination control there. No change was made in the routine of a 3-minute anteroom scrub, an admission bath with hexachlorophene for the newborn, use of an iodophor solution[2,3] in dip basins for personnel handling babies, use of the same solution for cleaning floors, walls and equipment, spacing of cribs, sterilization of nursery linen, cultures of the formula, room air and equipment, and culturing of the nose, throat and hands of personnel for pathogenic organisms. Anyone having a culture positive for Staphylococcus aureus was excluded from the nursery and, in some instances, from the obstetrical service also. Personnel were closely observed and were conscientious in maintaining technique.

When attention was directed to umbilical cord stumps in the nursery, it became evident that in most cases they were too long. In almost all cases the stump drooped over onto the abdominal skin, the lower side of the cord remaining moist and warm while only the upper side was exposed for drying. In addition, the cord was covered by the baby's diaper and shirt; often the baby was lying prone. Figure 1 shows a severed cord of extraordinary length. The usual length of the cord stump when the baby came from the delivery room was 1 to 1½ inches, as shown in Figure 2. After attention was turned to the problem, if a cord was too long, a clamp was applied next to the abdominal wall and the cord was clipped with sharp scissors to ¼ inch above the clamp. When the cord is cut the right length, it tends to "mushroom" over the clamp. Lest the cord be cut too close to the clamp, the infant's legs and lower body should be held

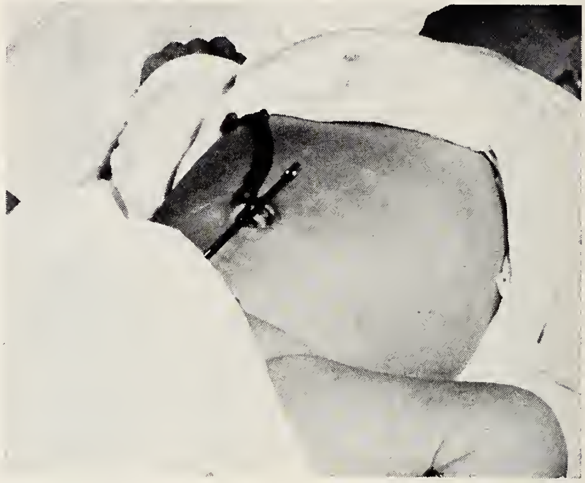

Figure 1.—An unusually long cord that was shortened to about ¼ inch above the clamp.

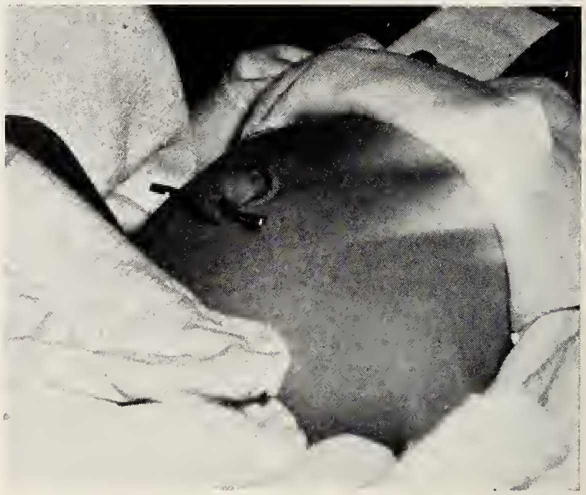

Figure 2.—General appearance and length of cord when baby arrives from the delivery room.

Submitted February 21, 1962.

firmly. On several occasions before this precaution became routine, the kicking or turning of the infant caused the cord to be cut so short that the clamp did not hold and suturing was necessary to stop bleeding.

After the reclamping and trimming of the cord, the umbilical area was left exposed for about six hours to permit faster drying and observation for bleeding. In addition a solution of povidone-iodine[1,4] was applied to the stump every 12 hours. If the cord appeared not to be drying rapidly enough during the nursery period, an electric light bulb was turned on to supply additional heat. Figure 3 shows a cord stump at 24 hours, the time the clamp is usually removed.

With this method of care the cord looked cleaner and healed faster (see Figure 4). In some cases the cord "fell" off before the infant was discharged home on the fifth day of life, causing an occasional inquiry from a mother as to whether the cord should be "off so soon."

Approximately 1,800 newborn babies were cared for in the nursery in a period of a year following the institution of the program of umbilical cord management described. Telephone calls from anxious mothers and home and clinic visits related to a slow-healing umbilicus were reduced by 90 per cent.

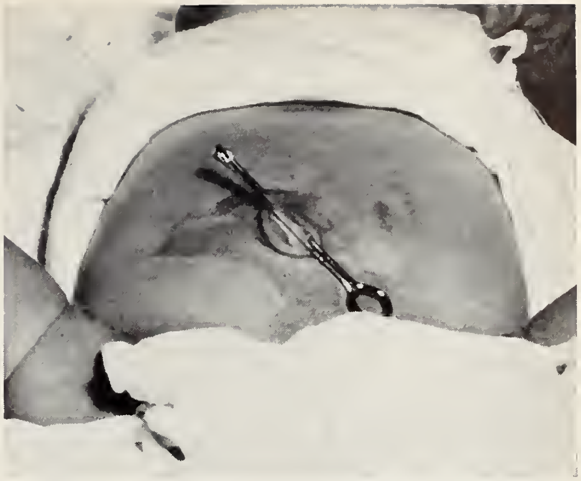

Figure 3.—Cord 24 hours old—short, dry and firm. Clamp is next to abdominal wall. Discolored area is application of iodine solution.

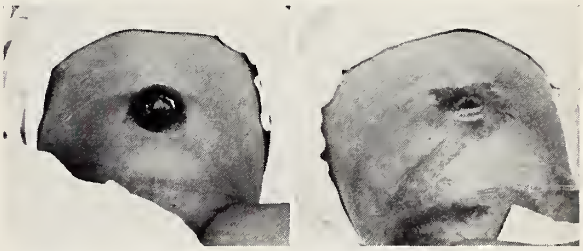

Figure 4.—*Left*, cord on fourth day of life; *Right*, cord on fifth day of life (day of discharge from hospital).

This material has been reviewed by the Office of The Surgeon General, Department of the Army, and there is no objection to its presentation and/or publication. This review does not imply any endorsement of the opinions advanced or any recommendation of such products as may be named.

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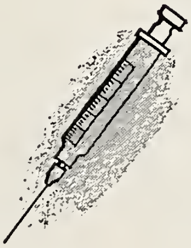

A Role for the Physician in Civil Defense

MAX L. LICHTER, ***M.D.,*** **Melvindale, Michigan**

• Recognition of the possibility of nuclear attack upon the U. S. imposes on the American physician the obligation of preparing to deal with its consequences. The responsibility has been accepted but every physician must continue his effort to increase our medical capabilities.

Organization and planning at all levels must continue and it is most essential that physicians participate in the education of the public. The A.M.A. through its Committee on Disaster Medical Care has played an active role in the development of civilian training courses and medical planning for disaster in this country.

IN OUR THERMONUCLEAR AGE, the danger is ever present that this energy could be used to destroy us and all mankind. Logical thinking might lead one to believe this will never happen because there could be no victor, only victims in every land. Unfortunately, this passive view oversimplifies a problem which is fraught with complexities. We must be realistic and accept the possibility of mass attack upon our country.

An aggressor must be made to understand that our military and scientific capabilities match, and even exceed his. He must also comprehend that the will and determination of the American people is firm, a potent force which is an integral part of our total national defense posture. He must know how deeply we value our way of life, the respect we hold for the individual and for law and order, and the passionate regard we have for freedom. He must realize that we are prepared to defend these beliefs to the bitter end.

To accomplish this preservation, our nation must survive—not as individuals, but as a population which can carry on our cherished ideals. We, as civilians, have the same responsibility to defend our country as those of our nation who are in the Armed Forces. Thus, we have civil defense, whose basic objective is national survival. To fulfill this objective, preparation and planning have to be carried out. This requires the active participation of all of this country's citizens to the utmost of their abilities.

For a nation to rebuild itself after a holocaust, there must be people whose health has been maintained at as high a standard as possible. Following attack, there will be a huge number of injured people who must be treated so that they may join their fellows in the rehabilitation effort which follows. During the post-attack and recovery phase, environmental conditions will be so disrupted that many illnesses can be expected. These will need to be treated and cared for if the health of our surviving population is to be maintained. The complexities of the medical care problem will be enormous but not insurmountable.

Medical care is a most crucial need in the restoration of our country. With it planned for carefully and intelligently, the American people will know that medical care will be available in a time of disaster. Thus, a most important morale factor can be provided which will assure our citizens and give them a feeling of hope that they will desperately need. This can be supplied only by the physician and his aides.

The people of the United States have always looked to their physicians for care and comfort in time of illness or injury. It is to the physician, then, that the American people will look in time of mass disaster. The physician, who is the leader of the medical care team which utilizes the important competence of the allied health professions, will accept the responsibilities that the American people expect him to assume.

Already, physicians have been actively engaged in civil defense throughout the country at the city, county, state and national levels. Planning and organizing has gone forward to a laudable degree. The American Medical Association, through its Committee on Disaster Medical Care, has given stimulus and encouragement to the many medical societies throughout the country, and has offered guidance and assistance in the development of planning.

Perhaps the most significant accomplishment of the Association is its "Report on National Emergency Medical Care." This was prepared at the request of and for the Office of Civil and Defense Mobilization. I strongly urge each of you to obtain a copy of the summary of the report and study it. Herein is outlined the role and responsibility of

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Presented at the Annual Meeting of the United States Civil Defense Council, October 17, 1961, Los Angeles. Dr. Lichter is chairman of the Committee on Disaster Medical Care of the American Medical Association.

Submitted December 27, 1961.

the medical profession, and therefore of the physician. Among these are the following:

Promote sound planning for mass casualties at all levels of government and at all levels within the professional medical and health organizations.

Encourage the population of the United States to engage in individual and collective survival training.

Lend assurance that a successful recovery from a mass attack is possible.

Ensure adequate medical training of personnel of the medical and health professions and of all other personnel potentially able to assist themselves and the health professions in the care and treatment of the survivors in a mass attack.

The foregoing, a partial listing, represents the responsibilities of the physician in the phase of preparation and education for mass attack. Much has been done but there is more that needs doing. The carrying out of the role and responsibility of the physician will require the continued effort of the many physicians who have already devoted themselves to the medical care aspects of civil defense. The development of a medical care program has to be a continuing process which requires that increasing numbers of physicians engage themselves actively in this endeavor.

Every civil defense plan has its medical section. However, implementation of this planning, in terms of the development of organization, is the critical need in most instances. In the overall civil defense plan, at whatever level, health cannot be regarded as just another technical service. Since the medical aspects cut across almost all the survival actions, it is recommended that the health branch of any plan be given strong support by the technical services in the plan. The health needs are so crucial to our survival that they must be given top priority. This will require the physician to be well aware of the entire civil defense plan so that the medical portion can function in the best possible manner. Also, the medical people must know and understand the concepts of the civil defense organization so the health branch can be flexible in fitting into any concepts as they may be developed.

Perhaps the physician's greatest role at this stage of civil defense development is to encourage the people to take survival training courses and to participate in these programs himself. In addition, educational projects for physicians and members of the allied health professions must be undertaken. Any plan is worthless without people who have been taught to understand it and know how to operate it. It must be realized that not enough physicians would be available in the postattack phase to care for all the injured. And of course there will be the usual needs for medical care of persons with illnesses not related to the attack. The planning, therefore, would contemplate that the professional capabilities of the physician would be utilized in those situations where only he can function. In this regard, one of the major functions of the physician would be to act in a supervisory capacity to the aides he has trained.

It is necessary to train people to assume some of the lesser activities of physicians. This training may be given to members of the allied health professions whose present capabilities can be expanded to enable them to perform additional services. This preserves the physician's time and skills for the more serious and complicated cases.

It is also necessary to train nonprofessional people to assist in the operation of medical care facilities. Required would be instruction in basic first aid in a course geared specifically to the civil defense problem, and such advanced training as the needs of planning might indicate. The services of such volunteers are essential in the operation of the Civil Defense Emergency Hospital (CDEH). After the first-aid training specific instruction concerning the CDEH would be carried out.

It is important that all of this training be conducted by physicians in order that the trainees be properly oriented.

The matter of survival training is of great concern to the physician and he has to take an active role in this area. Although special medical training must be given to as many as possible, it should be recognized that, initially, only a small proportion of the population will volunteer for the kind of training needed. In the aftermath of an all-out nuclear attack it is quite likely that survivors, injured or uninjured, would be confined to fallout shelters for two weeks or more, or until such time as the radiation level fell to a point where it could be tolerated. During this period, definitive treatment would be unavailable. It would be up to the individual or to his family and neighbors to provide the care needed to make survival possible.

It is therefore imperative to the objective of national survival (as well as individual survival) that as many people in the United States as can possibly be reached receive some training in helping themselves and each other. To this end the United States Public Health Service with the guidance of the American Medical Association has developed a "Medical Self-Help" training course, which will be offered to the American people. Three workshops are to be conducted across the country by the U. S. Public Health Service with the co-sponsorship of the American Medical Association to launch this program and to develop methods for presenting the material to ever increasing numbers of people. As the program expands into each of the states, it will be under the guidance and sponsorship of the state medical association and the component medical societies of the state association. The conduct of the medical self-help course will be by physicians, or under their supervision. This is an ambitious program which with the cooperative effort of all physicians can succeed as it must.

It is necessary for the physician himself to become acquainted with the principles of mass casualty care. Since conditions in the postattack period are going to be austere, some degree of familiarity with care under such circumstances is advisable. The subject of triage, which is the sorting and classifying of injured persons, needs to be considered. The priority for treatment under mass casualty conditions may differ from that used in current peacetime practice. Radiation sickness is rarely seen in ordinary circumstances but may be prevalent following attack, and the physician needs to familiarize himself with the symptomatology related to varying degrees of exposure, and must also learn the principles of treatment. The physician needs to know something about environmental and sanitation problems, for they are usually of pressing importance following disaster.

All hospitals and medical staffs need to develop plans for the utilization of their facilities in the event of disaster of any magnitude. Not all hospitals will be rendered inoperative, and those that remain would have an incalculable contribution to make. The training afforded the medical staff as well as all members of the hospital team would be of great value to the medical care effort.

The physician may be asked for advice by his patients and his friends or requested to give talks to various groups. Much emphasis should be placed upon the training and educational responsibilities of the physician. From a medical standpoint, the educational aspects of the program are the most important at the moment, although this emphasis on training and education cannot in any way be construed to minimize the importance of the many other responsibilities that physicians have in the civil defense picture.

The American Medical Association long has been interested in the problem of civil defense. It was the first national health organization to appoint a committee (in 1946) to look into this subject. This committee has become the Council on National Security. The Council now has, as part of its structure, a Committee on Disaster Medical Care which has served in advisory capacity to the Federal Civil Defense Administration, the Office of Civil and Defense Mobilization, and the United States Public Health Service. Much attention has been given to encouraging the state medical associations in their consideration of civil defense. The Committee on Disaster Medical Care has held regional meetings in several parts of the country for the past four years. It has now nearly completed its second round of visiting the various regions in the United States and has noted a commendable degree of progress and increased attention to the problem by the various state associations.

Each year just before the beginning of its annual meeting in June, the association, through its council and committee, sponsors a one-day meeting which deals with civil defense from a national standpoint. In addition, a two-day meeting called the County Medical Societies Conference on Disaster Medical Care, is held each November. The purpose of this meeting is to focus on state and local civil defense planning and to provide a forum where physicians involved in this effort can obtain advice and guidance. Further, the council, through its commendable staff, has developed a bibliography of all available films dealing with the medical care aspects of civil defense and a bibliography of publications and manuals. The association maintains a complete library of this material.

A newsletter called the *Civil Defense Review* is published bi-monthly by the council, which presents current information on medical civil defense activities throughout the country.

To translate all the effort of the medical profession and of individual members into effective action requires the closest relationship with civil defense authorities throughout the country. Civil defense directors should solicit and encourage the interest and participation of physicians. In turn, medical societies and physicians should offer their services and abilities to the civil defense organizations. This needs to be a cooperative effort and should be furthered in every city and county.

As has been true so often in the past, the American physician stands ready to care for his fellow man. This has always been done on a voluntary basis, the cornerstone of a philosophy which has provided the American people with the finest medical care available anywhere. This has been accomplished without external pressures because of the ingrained sense of responsibility which is a part of the credo of the physician. The medical care aspect of civil defense will be conducted by the American physician in the same time-honored voluntary manner. In many places in this country the first community civil defense effort was initiated by physicians which stimulated the formation of the local civil defense effort. Physicians cherish their traditions and precepts, and will continue to live by them. Civil defense, as a new discipline in American life, will be supported by physicians recognizing the crucial need for medical care.

2900 Oakwood Boulevard, Melvindale, Michigan.

Help for Male Nocturics

A Flexible, Reversible Urinal

WILSON STEGEMAN, *M.D.*, Santa Rosa

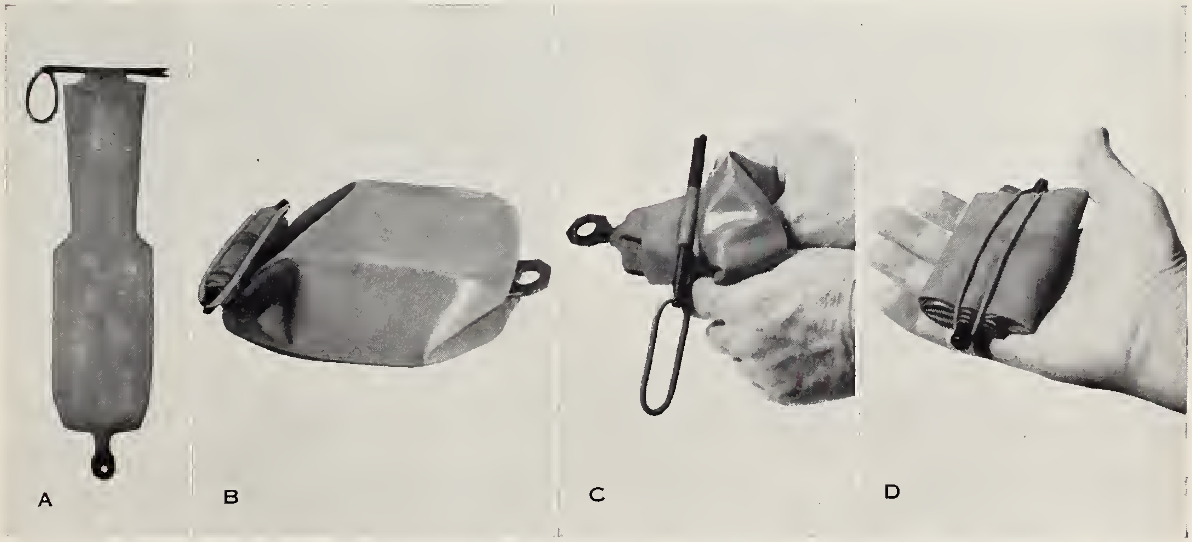
In reply to a 1959 questionnaire, 288 urologists estimated that 54 per cent of men over 50 years of age get up at least once a night to urinate. This was estimated to increase to 64 per cent by age 65. When at home, many of these night-voiders manage by one device or another to circumvent the objectionable, disturbing trip to the bathroom. However, when traveling, visiting or sleeping in strange surroundings, their discomfiture frequently becomes so real that many of them prefer to remain at home rather than risk embarrassment.

The depicted urinal, conceived and designed to assist this large group of men with their problem, consists of a flexible, smooth, reversible latex bag of 1½ quart capacity. It is equipped with an elongated neck and a positive-sealing roll-down closure apparatus. Silent, safe, easy closure can readily be accomplished under the bed clothes, without the need for turning on a light. The bag can then be safely deposited on the floor without danger of leakage or spilling.

In the morning, after safe and inconspicuous transport to the bathroom in a dressing-robe pocket, the bag can be rinsed and hung up to dry. It is designed to hang open, and having no crevices or acute folds. it drains and dries quickly. If it is to be packed immediately, the bag is flipped inside-out and either hung up to dry by the inside hanging loop or dried with a towel. It functions equally well in this reversed position. A minimum of cleansing effort is needed to keep the bag fresh. For packing, it folds compactly. The flexible urinal also can be useful to crippled persons, paraplegics and hunters and campers; it can be used safely in a sleeping-bag. Flyers of small planes have found it better than some of the various "relief tube" contrivances, especially the feature of inconspicuous disposability on deplaning.

Although the bag is valveless and not intended for wearing, holes in the winding rod permit securing it to the body by a band around the waist, for use by immobile or comatose bed patients.

Submitted December 4, 1961.
1166 Montgomery Drive, Santa Rosa.



Urinal bag (a) open and ready for use, (b) filled and sealed by winding the neck around winding stick and fastening with rubber ring, (c) being reversed for cleansing and drying, (d) folded compactly for packing.

Mechanical Aids at the Operating Table

RICHARD C. THOMPSON, *M.D.*, San Mateo, and
WILLIAM B. NEFF, *M.D.*, Redwood City

A MULTIPURPOSE APPARATUS to make a number of procedures at the operating table easier to do and often with less assistance has been devised. It can be used for abdominal retraction, especially for gallbladder surgery, for a suspension laryngoscope, for mouth prop support during tonsillectomy, for chin support to ensure a patent airway during general anesthesia in the operating room and in the dental office, and for supporting a Mayo tray.

Abdominal Retractor

Adequate exposure of the gallbladder frequently requires a second assistant, which may add considerably to the cost to the patient. Retracting the ribs and liver to provide good exposure can be difficult and very tedious and may keep a highly trained man from more productive and creative effort. It can be done better by means of a mechanical retractor (Figure 1) to be described.

The component parts are a metal rod, Figure 2, *B*, a half inch in diameter, bent at right angles, which can be attached to the rail of the operating table with a simple clamp, Figure 2, *L*, *O*. The clamp may slide the length of the table so as to be used over any part of the body. The horizontal portion of the rod projects over the chest of the patient and is adjusted to the optimal height and position. On the horizontal portion are placed one or more universal screw clamps (Figure 2, *K*, *M*), which hold in position retractors, such as a Richardson retractor or a Crile blade (Figure 2, *C*, *D*, *E*, *F*, and *G*). In Figure 1, *A*, the Richardson retractor holds the costal margin back and the Crile blade (Figure 1, *B*) then is used to gently retract the liver. The great versatility of this system for retraction permits the blades to be inserted in any position in the wound and at any desired angle. It is not in the surgeon's way as much as an assistant might be, and it can be put in place for use in thirty to sixty seconds. This retractor has been used extensively for about one year by a number of different surgeons at Mills Memorial Hospital, Peninsula Hospital and Sequoia Hospital, San Mateo County, California.

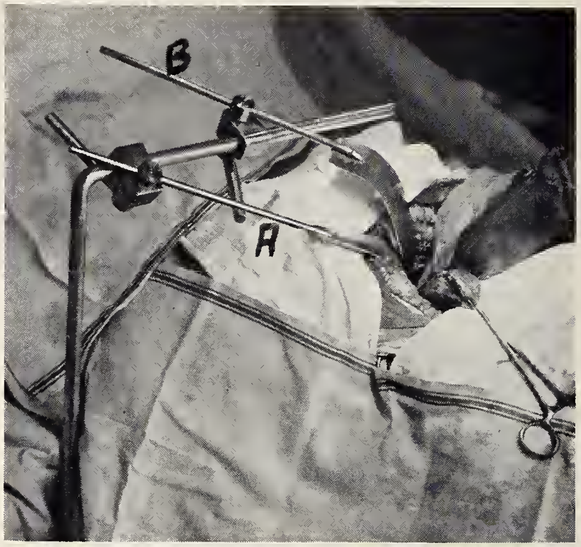


Figure 1.—New abdominal retractor especially valuable during cholecystectomy. (*A*) Richardson type blade retracting the superior margin of the wound and ribs. (*B*) A Crile blade retracting the liver and hilum.

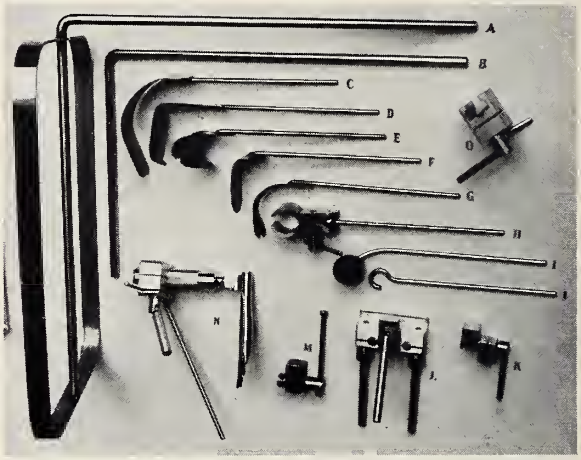


Figure 2.—Component parts of the Thompson supporting and retracting apparatus.

Suspension Laryngoscope

The laryngologist needs both hands to operate skillfully on the vocal cords, one to use the suction tube, the other for the operating instrument. The strain of sustaining exposure of the cords, during polypectomy, for instance, may be enormous unless a suspension laryngoscope is used.

A special clamp to hold the Foregger laryngoscope (Figure 2, *H*), or other laryngoscopes that are available (Figure 2, *N*) has been devised. To it is

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Submitted December 11, 1961.

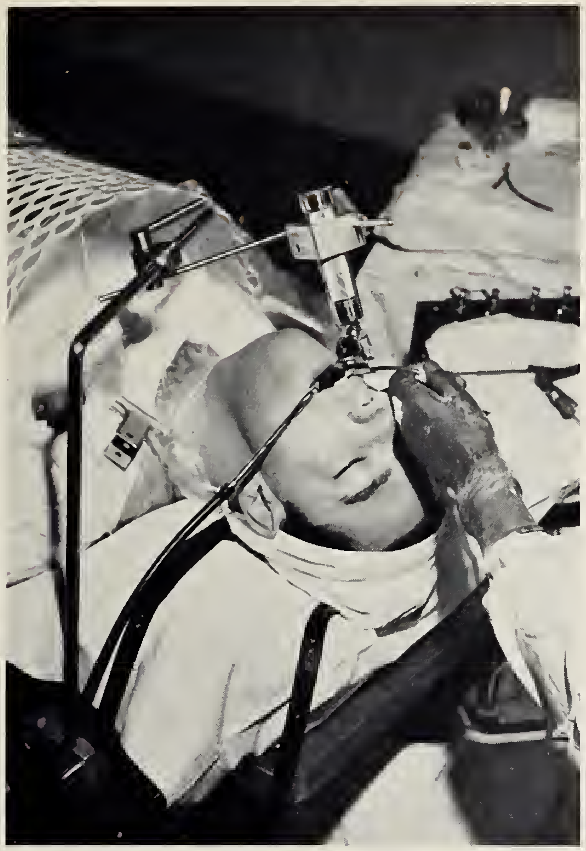

Figure 3.—A new suspension laryngoscope. With this attachment any available laryngoscope can be used as a suspension laryngoscope. Freedom of motion is maintained while the scope is being inserted.

attached a steel bar which slides into the universal joint of the suspension mechanism already described. An amazing freedom of motion of the laryngoscope is provided. The laryngoscope can be inserted into the patient's mouth, the cords exposed, and the exposure sustained simply by tightening the two screw clamps (Figure 3). As with other currently marketed suspension laryngoscopes, patients must be kept relaxed and quiet when the laryngeal exposure is maintained for a long period with a fixed and rigid device. When respiration is augmented by a ventilator of the cuirass type, deep relaxation can be provided and more prolonged procedures can be done safely.

Mouth Prop Support

During a tonsillectomy the surgeon and the anesthesiologist cooperate to provide exposure of the operative site and a continuously patent airway. When a Davis or McIvor mouth prop is used, it is usually supported by the anesthetist (a tedious and tiring task) or by the Mayo stand, which is difficult and clumsy to adjust. Or it may even be propped by an instrument resting on the patient's chest, which restricts respiration.

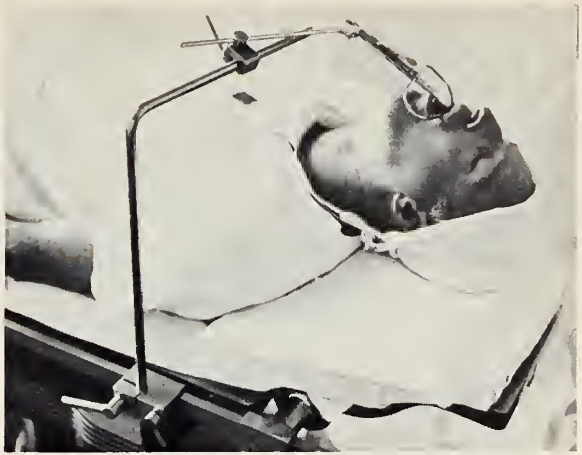

Figure 4.—Mouth prop hook. Davis or McIvor mouth props can be supported in the optimum position to provide a patent airway and exposure of the operative site with the mouth prop hook. It can be readjusted in seconds to meet varying needs.

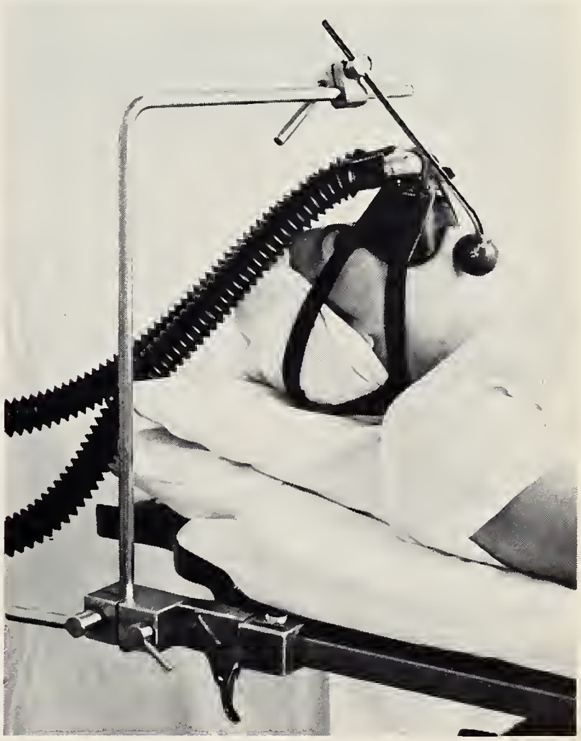

Figure 5.—The Thompson chin support. A silicone rubber sphere on the end of a ¼-inch rod fits between the rami of the mandible to maintain extension of the head and elevation of the chin during general anesthesia. The objective is a patent airway.

The Thompson mouth prop support (Figure 2, *I*), is another attachment which consists of a simple steel bar with a hook on the end. This attachment is placed in the universal screw clamp. After the

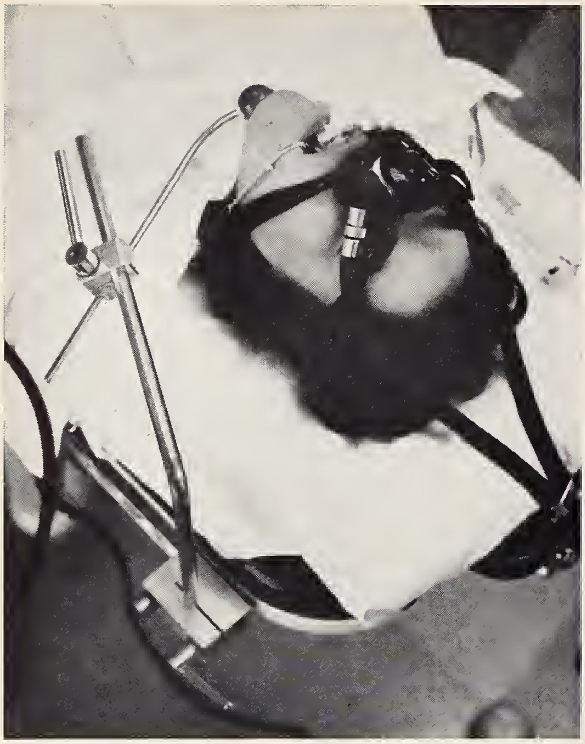

Figure 6.—The chin support as used in a dental office provides stability of the operative field and relieves the anesthetist of the chore of holding the chin.

surgeon fixes the mouth prop in optimal position, the anesthetist adjusts the hook and secures the clamp to support the mouth prop (Figure 4), which then is stable. This frees the anesthetist's hand to make necessary adjustments of other equipment.

Chin Support

The Thompson chin support is a curved rod with a silicone rubber sphere 1 inch in diameter on one end (Figure 2, *I*). The rod fits into the previously described universal joint, and permits the application of pressure to the chin as gently or as firmly as necessary in any direction. The simplest way to maintain the airway is for the anesthetist to support the patient's chin with his hand, but this is tiring and prevents his attending to other procedures without risk of relaxing the support enough to impair the airway. Some anesthesiologists use intubation simply because chin-holding becomes too fatiguing. Now a handy and simple apparatus for mechanically supporting the chin can be carried as routine equipment on any anesthesia machine, and it can be attached quickly to the operating table to provide chin support whenever needed (Figure 5). If it is possible to obtain a clear airway by extension of the head and support of the chin, this device will maintain the position.

Oral surgeons find the chin support helpful, for it not only assists in providing a continuously patent airway but, by limiting the mobility of the chin and head, makes operation easier. In addition, with the chin support the anesthetist's hand, which might otherwise have to be used to support the chin, need not be in the way.

Since continuous pressure such as is applied by mechanical apparatus of this type may do some harm, it is recommended that occasional adjustments be made to change the pressure points, just as a face mask is moved from time to time to prevent injury to the nose or cheek. Also to be borne in mind is that once the apparatus has been adjusted in position, it is unwise to flex or extend the table without first releasing the universal screw clamp.

Mayo Stand

During ophthalmological operations under general anesthesia a Mayo stand of a new type can be used to hold the drapes away from the body, thus giving the anesthesiologists ready access to endotracheal equipment there. After the patient is intubated, the Mayo stand is placed over the patient's chest and secured in place by means of the side rail clamp (Figure 2, *L*, *O*). Sterile drapes are then placed over the top, leaving the field below readily accessible. Adjustments in the height of the table can be carried out without changes in adjustment of the Mayo stand.

545 Fairfax Avenue, San Mateo (Thompson).

CASE REPORTS

Recurrent Tetanus

HARVEY D. CAIN, *M.D.*, Vallejo, and
FRANK G. FALCO, *M.D.*, Pacific Palisades

TETANUS is a relatively uncommon disease, the incidence in California ranging from 0.3 to 0.4 per 100,000.[8] Approximately half of the patients die and most survivors are actively immunized with toxoid. The number of persons who have a second, separate attack of tetanus is therefore extremely small. Only three cases of recurrent tetanus have been reported in the American literature.[5,11,12] The present case is the fourth.

In a review by Vener and Bower,[12] six cases of recurrent tetanus are discussed, and the importance of distinguishing relapse of a first infection and a second separate attack of tetanus is stressed. In their opinion, if signs of tetanus return after the patient has been completely asymptomatic for a period of one month, then a new and separate infection is assumed to have taken place. On the other hand, Möbius[7] said that relapse of an infection may occur even after several years, the tetanus organism having remained dormant while surrounded by cicatricial tissue and infection recurring upon rupture of this protective cicatricial shell, perhaps by trauma.

REPORT OF A CASE

The patient, a 38-year-old Caucasian woman, was admitted to the Communicable Disease Unit of the Los Angeles County General Hospital October 31, 1953. For the three preceding days there had been progressive symptoms of "fullness in the throat," difficulty in opening the mouth, difficulty in swallowing, malaise and restlessness. At time of admission the patient could barely swallow liquids. Five weeks before admission, the patient had had the left upper molar extracted, and a week later had had a granulomatous growth removed from the right middle turbinate of the nose. As far as was known, no tetanus toxoid injections had been given.

Upon physical examination, dehydration, moderate trismus and nuchal rigidity were observed. The blood pressure was 120/70 mm. of mercury, the pulse rate 100 per minute and the temperature was 100° F. No site of infection or foreign body was found. The area from which the tooth had been removed was well healed. Dental x-ray films were not taken. Upon examination of the right turbinate, a consultant in otolaryngology noted normal-appearing granulation tissue. No evidence of pelvic infection or abortion was observed, nor was there any sign of drug addiction. The muscles of the back and abdomen were in spasm and the deep tendon reflexes were hyperactive. Since the focus of infection could not be identified, no cultures were obtained.

Hemoglobin was 15 gm. per 100 cc. of blood and leukocytes numbered 8,600 per cu. mm. with 85 per cent polymorphonuclear cells. The specific gravity of the urine was 1.030, the reaction for albumin three plus and for carbohydrate one plus; and upon microscopic examination moderate amounts of bacteria were noted. (Later, following hydration of the patient, results of urinalysis were within normal limits.) On the date of admission, results of chemical analysis of the blood were as follows: Nonprotein nitrogen 48 mg. per 100 cc., carbon dioxide 24 mEq., potassium 4.7 mEq., sodium 143 mEq. and chlorides 105 mEq.

After intracutaneous and intravenous testing for sensitivity with negative results, 120,000 units of tetanus antitoxin was administered intramuscularly and 40,000 units intravenously. Thereafter 1,500 units was injected every four days. Chloral hydrate was given rectally or orally, in amounts of 0.9 to 1.2 gm. every two to four hours, as needed. Six hundred thousand units of penicillin was injected intramuscularly every six hours. For the first eleven days fluid intake was predominantly by vein. Tracheotomy was not required.

During the first ten days the patient had as many as 20 to 30 generalized contractions a day, which ranged from mild to moderately severe. On the ninth hospital day tachycardia (110 to 140 beats per minute) developed, and then persisted for seven days. No generalized tetanic contractions occurred after November 18 although mild spasms of the neck and abdominal muscles lasted another six days. X-ray films of the lumbar vertebrae on November 27 showed fractures of the left fourth and fifth transverse processes without displacement. Before she was discharged the patient received one dose of

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From the Los Angeles County General Hospital, Communicable Disease Unit, Los Angeles.

Submitted March 8, 1962.

tetanus toxoid and was advised to complete a series of three injections. On December 1 she was discharged from the hospital as clinically cured of tetanus.

Comment

The tachycardia that developed on the ninth day after administration of tetanus antitoxin and persisted for a week could have been a manifestation of serum sickness. With regard to the x-ray evidence of vertebral compression fracture, this has been noted in as many as 20 per cent of patients who survive tetanus.

Second Admission

Six and a half years later, on May 5, 1960, this same patient was again admitted to the Communicable Disease Unit with trismus, dysphagia and nuchal rigidity. Symptoms had begun two days earlier, with dysphagia. The next day a "drawing sensation" began in the face and neck, and on the day of admission the patient was unable to swallow water. The only recent known trauma was a cut on the left hand a week before admission. The patient said she had had no injection of tetanus toxoid other than that given in the hospital.

When examined she was observed to be in distress with painful trismus, risus sardonicus and paraspinal muscle spasm. The blood pressure was 120/70 mm. of mercury, the pulse 100 per minute and the temperature was 99° F. A gag reflex was elicited and was followed by generalized tetanic contractions lasting 90 seconds. The heart tones were normal and no murmur or evidence of cardiomegaly was noted. All deep tendon reflexes were hyperactive Superficial lacerations on the middle and index fingers as well as a small splinter in the middle finger were found on the left hand.

The hemoglobin content was 13.0 gm. per 100 cc. of blood. Leukocytes numbered 5,750 per cu. mm., with 70 per cent polymorphonuclear cells. Results of urinalysis were within normal limits. On May 9 the blood urea nitrogen was 14 mg. per 100 cc., carbon dioxide was 20 mEq., potassium 4.2 mEq., chlorides 102 mEq., sodium 133 mEq., Ca 10.8 mg. and Br 14.9 mEq. Clostridium tetani did not grow in cultures of material taken from the wound on the hand.

Desensitization procedures were necessary, as the patient had positive skin reactions to both equine and bovine tetanus antitoxins. A total of 80,000 units of tetanus antitoxin was administered. The minor lesions on the left hand were debrided under local anesthesia. Respiratory distress necessitated tracheotomy. Chloral hydrate and calcium bromide were given per rectum for sedation. Diphenhydramine in doses of 50 mg. was injected intramuscularly every six hours as a prophylactic measure against serum sickness.

Tetanic contractions varied from mild to very severe. On the third hospital day sinus tachycardia of 110 beats per minute developed. As a further measure against serum sickness 100 mg. of hydrocortisone was given intravenously on the fourth hospital day, and later the dose was increased to 300 mg. per day. On the sixth hospital day the pulse rate had increased to 136 beats per minute, but blood pressure and urine output remained normal. An electrocardiogram recorded in the morning of May 11 showed nonspecific ST-T changes as well as sinus tachycardia of 140 beats per minute. Generalized tetanic contractions had decreased to occasional episodes of mild intensity. In the evening of the same day supraventricular tachycardia of 180 beats per minute developed and blood pressure dropped to shock level despite intravenous administration of metaraminol and 0.12 mg. of lanatoside-C. Although the heart rate slowed slightly, multifocal premature ventricular contractions appeared and could not be controlled by procaine amide. Irregularity of ventricular rhythm was noted to be more pronounced during episodes of generalized tetanic contractions. Ventricular fibrillation was a terminal event, and the patient died May 12, 1960, the eighth hospital day. Unfortunately, consent for autopsy could not be obtained.

DISCUSSION

Current evidence indicates that cardiovascular abnormalities can cause severe problems in patients receiving either active or prophylactic treatment with tetanus antitoxin.* In the active disease it has been postulated that tetanus toxin may affect the myocardium.[3] Serum sickness from tetanus antitoxin undoubtedly plays an important role in the cardiac abnormalities described, namely myocardial infarction, sinus tachycardia or nodal tachycardia, prolonged Q-T interval, ST segment elevation and premature ventricular contractions. In our experience with some forty cases of tetanus, cardiac complications have constituted a greater problem than nutrition, electrolyte imbalance, inability to control contractions and respiratory distress. The combination of calcium and digitalis is potentially hazardous if not used with caution; ventricular arrhythmias have been noted in the absence of both these agents.

Cardiac arrest during a generalized tetanic contraction has been previously observed in another patient. In that case, electrocardiographic monitoring confirmed restoration of sinus rhythm following cardiac massage, but the patient died of another episode of cardiac arrest following a moderate generalized contraction. Routine electrocardiographic monitoring is likely to reveal more cases of severe cardiac difficulty in patients with tetanus.

SUMMARY

The fourth reported case of recurrent tetanus infection in the United States is presented. The report further confirms the statement that neither the active disease nor a single tetanus toxoid injection produces lasting or effective immunity. Cardiac complications may constitute an important cause of death in patients with tetanus.

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*Reference Nos. 1, 2, 4, 6, 9, 10, 13.

Kaiser Foundation Rehabilitation Center, 2600 Alameda Street, Vallejo (Cain).

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Arthrodesis of a Knee for Neuropathic Disease

FRANK E. WINTER, M.D., Visalia

TREATMENT of neuropathic conditions in weight-bearing joints has long been a challenge to orthopedic surgeons. In spite of the best possible bracing, slow disintegration with increasing instability and incapacitation may occur. Arthrodesis serves best in these circumstances but has been difficult to attain. In the case here presented arthrodesis was accomplished by using a special clamp which permits the femur and tibia to be tightly pressed together for weeks while bony ankylosis is taking place.

The apparatus consists of two 4 mm. Steinman pins inserted into the femur and tibia, respectively, at right angles to their shafts and compressed by the special apparatus devised by Charnley. The projecting points are held together by screw clamps, and wing nuts are tightened until the Steinman pins bow.

REPORT OF A CASE

The patient, a 54-year-old married agricultural laborer, was first observed August 15, 1958, with pronounced swelling of the right knee, which the patient said "gave way" easily but was not very painful.

Twenty years previously, the patient had had third degree burns over the posterior aspect of both lower extremities, necessitating skin grafts and resulting in some limitation of knee motion. In 1950 a bale of hay was thrown against his right knee. No unusual complications arose then, but after x-ray films had been taken he was told that some day an operation would be needed. About a year previously he had noted gradual swelling of the knee, then rapidly progressive swelling in the preceding two months.

About 1942 the patient had a positive reaction to a serologic test for syphilis. In 1944 he was treated, apparently with penicillin, once or twice a week for six months. Following this, the patient believed, the reaction was negative for syphilis. He had donated blood on two occasions since then.

Upon physical examination the temperature, pulse and respirations were within normal limits. The blood pressure was 190/110 mm. of mercury in both arms. Some slurring of speech, a suggestion of euphoria and cardiac abnormalities which a consultant considered suggestive of hypertensive vascular disease with probable aortic dilation, were observed. Results of neurological examination were within normal limits except that the pupils were small and did not react to light or accommodation.

The right knee showed massive effusion and considerable instability. Scars over both popliteal areas were well-healed; they caused no limitation of knee motions.

Paracentesis of the knee had been carried out elsewhere several times in the previous few months and the patient was now requesting amputation.

X-ray films of the right knee (Figure 1) confirmed the clinical impression of a neuropathic Charcot joint.

Blood cell count and nonprotein nitrogen content were within normal limits and a serologic test was "weakly reactive" for syphilis. No abnormality was noted in the urine.

Aspiration of the knee was carried out weekly

Submitted October 6, 1961.

over the subsequent month, and from 300 to 800 cc. of semi-viscous, yellowish fluid was withdrawn on each occasion.

On September 16, 1958, a compression arthrodesis, using the Charnley method and his compression apparatus, was carried out. At operation the destruction of the joint was seen to be greater than had been suggested on the x-ray films. The menisci and cruciate ligaments were completely destroyed. Upon resection of the articular surfaces, however, the bone appeared fairly healthy, not sclerotic.

After operation the extremity was placed into a Thomas splint and the postoperative course was uneventful. Balanced suspension was continued at home. On October 20, 1958, six weeks after operation, patient was readmitted to the hospital, the pins were removed and the leg was placed into a long leg cast. X-ray films immediately afterward showed the bones in satisfactory position, but films taken the following day showed a half inch separation between the tibia and the femur (Figure 2). Attempts at closed reduction under general anesthesia failed and the knee was reopened on October 24, 1958. There was considerable distraction although some soft callus had formed between the fragments. New Steinman pins were inserted and the Charnley apparatus reapplied. Balanced suspension was used again. Then, on December 14, 1958, a cast was applied, this time without removal of the pins.

Four months after the second operation, the cast and pins were removed and the knee showed solid fusion, clinically and radiologically, and there was no pain. A month later, against medical advice, the patient returned to full-time agricultural labor. He injured his right ankle in stepping into a ditch three or four inches deep. There was great swelling at the joint, but little pain. X-ray films (Figure 3) showed a pathological fracture and extensive Charcot involvement. The fracture was easily reduced and a cast applied. Healing was satisfactory and the patient was able to return to work four months later.

He worked regularly after this, doing agricultural labor, and was handicapped only for jobs requiring squatting or the use of a ladder.

When last observed, May 31, 1961, the patient had no pain in either the knee or the ankle. Fusion of the knee (Figure 2) was solid and the only abnormality noted was slight effusion of the ankle. The right leg was an inch and a half shorter than the left and the patient wore extra lifts in the right shoe to compensate.

DISCUSSION

Results of arthrodesis of "neuropathic knee" have been notoriously poor by all reported methods. Charnley,[2] in reporting 67 knee fusion operations, included only two on neuropathic joints, in one of which the operation failed. Charnley also cited a series in which Bado and Novales,[2] using the compression method, obtained fusion in two of three cases of tabes dorsalis.

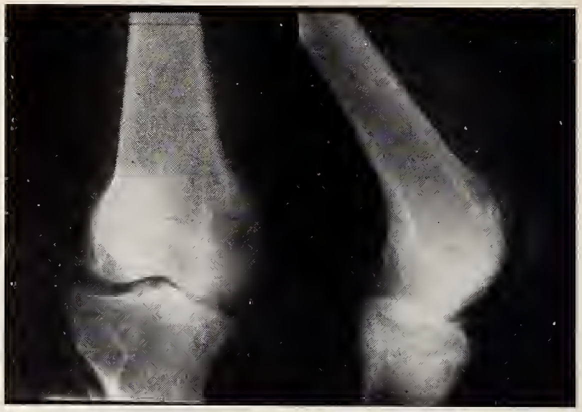

Figure 1.—Antero-posterior and lateral x-ray views of right knee, August 1958. Note destruction of tibia (medial aspect) and femoral condyles (posterior).

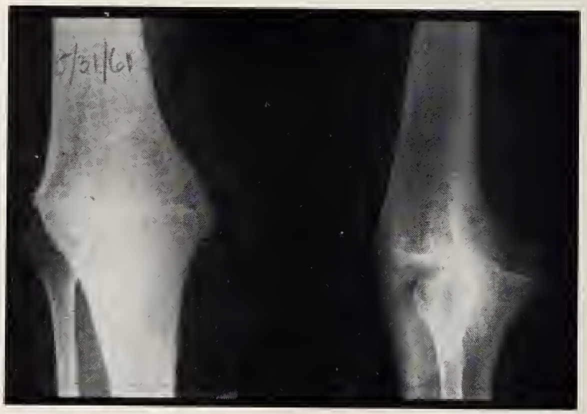

Figure 2.—Antero-posterior and lateral, May 31, 1961, showing solid ankylosis.

Wiseman,[4] reviewing reports of arthrodesis for "neuropathic knee" in 20 cases, noted that the operation failed in three of eleven cases in which the compression method was used. In 1958 Valls[3] reported ten operations for neuropathic disease of the knee, with six successful.

209 South Floral, Visalia

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4. Wiseman, L. W.: Neurogenic arthritis and the problems of arthrodesis of the neurogenic knee, Clin. Orthopaedics, No. 8:218, 1952.

Retroperitoneal Free Air

LAWRENCE DUCKLER, M.D., Portland, Oregon

FREE AIR in the peritoneal cavity secondary to a perforated viscus is commonly visualized on roentgen films. On the other hand free air in the retroperitoneal space is found rarely.

This is the report of a 78-year-old white woman in whom severe left lower quadrant abdominal pain developed during self-administration of an enema for constipation. Exploratory laparotomy revealed retroperitoneal feces, gas and fluid behind the descending colon from the rectosigmoid, which was ruptured, to the splenic flexure. The rupture was traumatic and no evidence of inflammatory or neoplastic disease was noted.

I think the diagnosis of retroperitoneal rupture of bowel could be made from the roentgen appearance (Figure 1).

Submitted March 2, 1962.

9911 S.W. 62nd Avenue, Portland, Oregon.

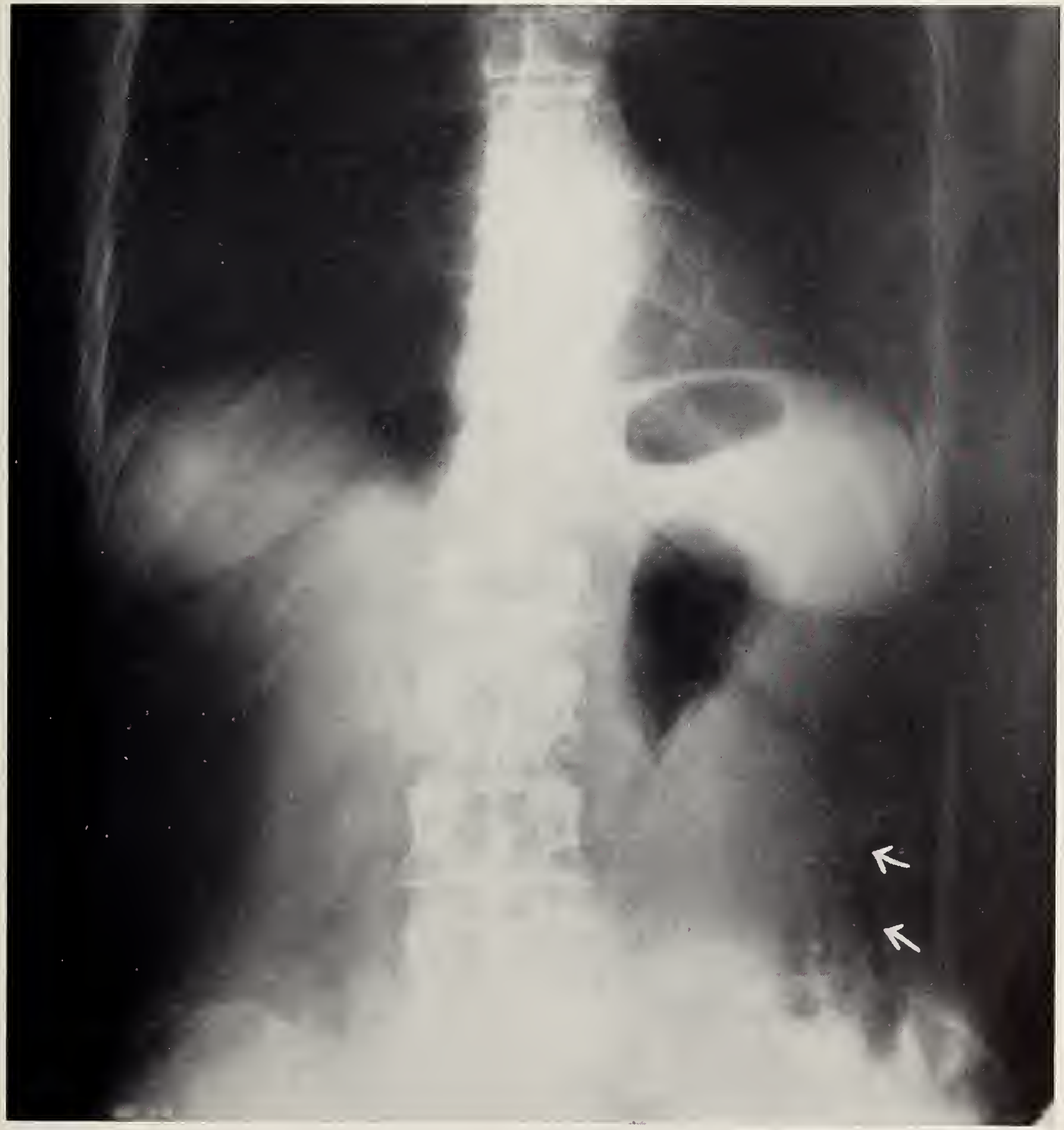

Figure 1.—Flat film of abdomen of a 78-year-old woman, showing retroperitoneal gas and feces from a ruptured sigmoid colon. This is a rare occurrence. The film was made after severe pain developed in the left lower abdominal quadrant during self-administration of an enema. The gas can be seen in broken streaks, with a considerable bubble in the flank. The large gas bubbles in the upper abdomen are presumably in the stomach.

California
MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Time for Unification

This is the month when the unification of the medical and osteopathic professions in California becomes a reality, ending more than 20 years of effort by representatives of both professions.

Members of the California Medical Association have been kept abreast of the unification program by presidential letters which have given the latest progress. Up-to-date reports on some of the steps in this progress are set down here as a matter of review for those who have followed the course of events and for the information of those who may have overlooked the earlier communications.

On the educational side, the former osteopathic college in Los Angeles has changed its name legally to California College of Medicine and has received accreditation as a medical school from the Council on Medical Education and Hospitals of the American Medical Association and from the Association of American Medical Colleges.

The new medical college will be headed by a dean who is experienced as former dean of the University of Arkansas Medical School, Doctor Benjamin Wells. Doctor Wells has risen to the challenge presented in creating a topflight faculty and starting off a new medical school under 1962 conditions.

The school has also issued a number of M.D. degrees. First to receive this degree were the members of the faculty, who were suggested by the accrediting agencies as entitled to the degree as teachers at an accredited medical school. Also granted the M.D. degree were the members of the 1962 graduating class, the first students to be so honored.

By the time this issue of California Medicine is in the hands of its readers, additional M.D. degrees will have been issued to a number of members of the California Osteopathic Association whose records have been examined and who are considered eligible for the honor. The conferring of these degrees will take place on July 14 and 15, at which time each group receiving the new degree will be given a welcome to the ranks of organized medicine and a brief orientation program.

Legislatively, several bills have been adopted by the State Legislature and signed into law. One of these measures requires that any physician who has held the D.O. degree and subsequently has received the M.D. degree shall notify both the Board of Medical Examiners and the Board of Osteopathic Examiners of his election to practice under one degree or the other. He will not be allowed to practice under both. His election will then determine the proper state board to exercise jurisdiction over him.

Administratively, the former California Osteopathic Association is changing its legal name to Forty First Medical Society. It will be granted a charter by the California Medical Association under the new name. Its members will be all those M.D.'s formerly affiliated with the C.O.A. who have elected to practice under the Board of Medical Examiners and have elected to join the Forty First Medical Society of the California Medical Association.

The bylaws of this society provide that its members may be located in any county of California and shall not be eligible to join any of the existing county medical societies until the Forty First gives permission to do so as a means of dissolving the society. The move is expected to require several years' time as a settling down period.

With the granting of a charter, the Forty First Medical Society may then report its membership to the California Medical Association and qualify for the appropriate number of C.M.A. Councilors and members of the House of Delegates. Thus the new society will have proportionate representation from its very beginning.

The California Medical Association has worked hand in hand with the California Osteopathic Association toward complete unification. Members of committees of both associations have labored long and hard toward this end. The educational and legal advisors of both groups have done yeoman work in establishing a proper educational atmosphere and in looking ahead at all aspects of the law which might affect the unification program.

There remains one more step to make this program complete—the affirmative vote of the people of California on Proposition 22 in the November statewide general election. This proposition provides, in brief, for the cessation of further osteopathic licenses, for assumption of control over all M.D. licenses by the Board of Medical Examiners and for the continuation of supervisory powers by the Board of Osteopathic Examiners until such time as not more than 40 licentiates are still under the osteopathic board's jurisdiction.

If the unification program and the aspirations of all those associated with it are to be fulfilled, this proposition must be approved by the voters. Toward this end, plans have already been made for a positive and aggressive campaign to insure the passage of Proposition 22. Committees have been appointed to work jointly, all public relations facilities of both organizations have been marshalled, a campaign director has been selected and the raising of needed funds has been planned. All members of the Association should throw their weight behind this campaign.

There will be opposition to this proposition, emanating from national osteopathic headquarters and represented locally by a small group subservient to the national organization. The efforts of these opponents must be more than matched if a satisfactory vote is to be achieved.

One problem in this effort—which is also one of the major reasons for the unification—is the public misunderstanding of the points of similarity or difference between the M.D. and the D.O. degree. In some states of our country, an osteopath is severely limited in his license and does not have the professional stature that he has in California. Voters who have come here from areas where that is the case may not understand that in California the two groups have been practicing along parallel lines, under the same state laws, for the past 40 years.

If this misunderstanding is to be erased, much work must be done. Both the C.M.A. and the C.O.A. (Forty First Medical Society) are gearing up for the campaign ahead. All members will be asked to do their share. The citizens of California are entitled to the advantages inherent in this unification. We must not let them remain uninformed. We must not let them down.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes
481st Meeting

Minutes of the 481st Meeting of the Council, Los Angeles, Biltmore Hotel, May 19, 1962.

The meeting was called to order by Chairman Anderson in the Galeria Room of the Biltmore Hotel, Los Angeles, on Saturday, May 19, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, and Councilors MacLaggan, Wilson, Todd, Quinn, O'Neill, Bullock, O'Connor, Ham, Rogers, Dalton, Davis, Miller, Watts, Morrison, Campbell, Kaiser, Anderson and Dozier. Doctor Edgar Wayburn attended as editor pro tem. Absent for cause, Editor Wilbur, Secretary Hosmer, Councilor Murray.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Tobitt and Bowman, Mrs. Griffith and Doctor Miller of CMA staff; county executives Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Dalbec and Baker of Los Angeles, Blankford of Marin, Grove of Monterey, Burris of San Diego, Neick of San Francisco, Thompson of San Joaquin, Donovan of Santa Clara, Brown of Sonoma, Bailey of Tulare and Rideout of Butte-Glenn; Messrs. Hassard and Huber of legal counsel; Messrs. Read and Salisbury of the Public Health League; Etchel Paolini of California Physicians' Service; Doctors T. Eric Reynolds, William K. Friend, Eldon E. Smith, Richard J. Lescoe, Jack W. Baker, Arthur F. Edwards, John C. Brennan, Warren L. Bostick, Dan O. Kilroy, Stuart Knox, John E. Vaughan, Seymour Strongin, Richard Miller and others; Dr. W. Ballentine Henley, President of California College of Medicine; Mr. James E. Bryan, consultant.

A quorum present and acting.

1. *Minutes for Approval:*

On motions duly made and seconded in each instance, approval was voted for minutes of the 479th Council meeting, held April 14-17, 1962, and the 480th Council meeting, held April 18, 1962.

2. *Membership:*

(a) A report of membership as of May 16, 1962, was presented and ordered filed.

(b) On motion duly made and seconded, 1,206 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 19 applicants were voted Associate Membership. These were: Robert C. Boullon, Alameda-Contra Costa; Charles Wm. McLenathen, Arthur James Moss, Louis Joseph Rosner, Irwin Rubell, J. Kendall Van Deventer, Edwin T. Wright, Los Angeles County; Elizabeth Manson, Marin County; Emir Allen Gaw, Napa County; Morris M. Rubin, Orange County; Philip J. Schmahl, San Bernardino County; Albert D. Hall, San Francisco County; Anne W. Becker, Fitz-John Weddell, Jr., San Luis Obispo County; Bruce R. Jessup, Richard K. Shaw, Santa Clara County; Carlton C. Purviance, Solano County; Donald A. Ballard, Ventura County; Leon M. Swift, Yuba-Sutter-Colusa.

OMER W. WHEELER, M.D.	President
SAMUEL R. SHERMAN, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
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(d) On motion duly made and seconded in each instance, Retired Membership was voted for Doctors Emery Laurence Meyers, Butte-Glenn County; Mary W. Harris, Marin County; and Jean Louis Brindamour, San Francisco County.

(e) On motion duly made and seconded, reductions of dues were voted for seven members because of illness or postgraduate study.

(f) Mr. Hassard reported on progress made toward formation of the Forty First Medical Society, which intends to be ready to receive a charter, already authorized, in August, 1962. Details of the formation of the society were discussed.

3. *Report of the President:*

Doctor Wheeler reported on recent meetings with osteopathic leaders and outlined a series of appearances he had made in recent weeks.

4. *Committee for Emergency Action:*

Doctor Wheeler reported on a meeting of the Committee for Emergency Action, at which discussion was held on mass polio immunization programs.

Doctor MacLaggan went into additional detail on the immunization programs and urged that publicity be instituted promptly to the profession and the public, outlining the desirability of carrying out mass programs in the fall months. On motion duly made and seconded, it was voted to institute both professional and public releases calling for mass polio inoculation campaigns to be carried on in the fall months. The release would outline the health factors, vaccine shortage and other conditions which indicate undesirability of summer campaigns, and call on the county societies for their cooperation under these principles.

5. *Reports of Medical Schools:*

(a) Councilor Quinn, reporting for Loma Linda University, outlined a program of expansion being undertaken by the school, to result in the entire medical course being taught in Los Angeles.

(b) Doctor Clayton G. Loosli, dean of medicine at University of Southern California, reported on a program of expansion, new buildings and other facilities of the school.

He also reported a strong alumni group working in behalf of the school and stated that about 85% of the medical alumni totaling about 2,000 are residents of areas south of Santa Barbara.

(c) Doctor W. Ballentine Henley, President of California College of Medicine, expressed his thanks at attending the meeting, reported that the California Osteopathic Association in its annual meeting, just concluded, had amended its bylaws and taken all other steps preparatory to unification with the CMA. Doctor Henley also reviewed the procedures taken for the granting of M.D. degrees and outlined the program to be followed for commencement and orientation programs.

6. *State Department of Public Health:*

Doctor Harold M. Erickson, deputy director of Public Health, reported on the outlook for mass polio immunization and expressed the desire of the department to cooperate with the CMA and the county societies in achieving a high percentage of coverage in such campaigns.

7. *State Department of Mental Hygiene:*

Doctor D. C. Gaede of the State Department of Mental Hygiene gave a progress report on the department's long-range plan to transfer mental health cases into private facilities. He also reported that a day care center is to be opened in San Francisco following opening of the first center in San Diego. A third center is planned for Los Angeles.

8. *State Department of Social Welfare:*

Doctor Lester McDonald gave a statistical review of the cases now on welfare rolls, pointing to a decline in participation in many programs. He also reported that the Medical Assistance to the Aged program now has 14,800 recipients, of whom about 30% have not been transferred from other programs.

9. *Report of President-Elect:*

Doctor Sherman reported on his recent activities and appearances and commented on the need for a wider understanding of the role played by California Physicians' Service. He introduced a resolution which, on motion duly made and seconded, was voted approval. The resolution reads:

Resolved: That the Council of the California Medical Association urge and encourage the Board of Trustees of California Physicians' Service to initiate through resolutions to both the Council and the House of Delegates of CMA, new, improved and constructive programs of CPS coverage to further strengthen the position of CPS in the voluntary prepayment insurance field in the state of California to the mutual benefit of the physicians of California and their patients. This would apply particularly to new pilot programs for experimentation on a local basis.

10. *Committee on Committees:*

Doctor Sherman reported for the Committee on Committees and presented nominations for several committees, all of which, on motion duly made and seconded, were approved.

He also called attention to a Bylaw amendment which eliminated the Committee on Legislation from the Bylaw structure and proposed that this be made a special committee of the Council. On motion duly made and seconded, the Committee on Legislation was voted to be a special Council committee, with Dan O. Kilroy as chairman and Doctors Stuart C. Knox and Samuel R. Sherman as members.

11. *California Physicians' Service:*

Doctor John Morrison reported on the program of the National Blue Shield Commission for medical coverage of the aged and outlined the manner in which California Physicians' Service will participate.

12. *Finance Committee:*

Doctor Davis presented a report of income and expenditures for April and for the ten months ended April 30, 1962.

Doctor Davis also reported that the committee had voted to favor an additional bank loan guarantee of $20,000 to assist the California Commission for Accreditation of Nursing Homes and Related Facilities in securing working funds. On motion duly made and seconded, it was voted that the Association guarantee a bank loan up to $20,000 for this purpose.

13. *Bureau of Research and Planning:*

Doctor Gerald W. Shaw reported that the Bureau of Research and Planning was continuing several studies started earlier and that a report on *Newsletter* would be prepared for distribution to the Council prior to its next meeting. A physician fee index survey already authorized is to be initiated June 30. The purpose of this study is to determine the accuracy of the physician fee index component of the "Medical Care Index" of the U.S. Bureau of Labor Statistics.

14. *Commission on Public Agencies:*

Doctor MacLaggan presented a proposed press release on the subject of mass polio immunization campaigns which had been discussed earlier. On motion duly made and seconded, the release was approved, subject to several outlined amendments.

On motion duly made and seconded, approval was voted for a guide for polio immunization campaigns, prepared by staff for distribution to county societies.

15. *Bureau on Communications:*

Doctor Warren L. Bostick gave a progress report on the Bureau on Communications, which he stated is currently operating as a unit without subcommittees. Various areas of responsibility have been assigned to individual members of the bureau.

16. *Staff Report:*

Mr. Hassard requested approval of a statement prepared by staff on closed chest cardiac resuscitation. On motion duly made and seconded, the statement was voted approval.

17. *Legal Counsel:*

Mr. Hassard reported that the court had ruled in favor of defendants' demurrers in a case brought by osteopathic interests seeking to block the unification program. The plaintiffs still have the right to appeal.

Mr. Hassard also reported on another court case, where a physician had been denied a hospital staff appointment and later, by court order, was given public hearings on his staff application. The court has now held that the hospital board—a public district hospital—has authority to deny staff membership for cause and that the mere holding of a valid license to practice does not entitle a physician to a hospital staff appointment.

Mr. Hassard further reported on an initiative measure which would provide free medical care for all residents of California. The measure has been given a title by the Attorney General and copies are being circulated in an effort to gain the required 420,000 plus signatures for qualification for the November election.

18. *Standardized Claims Forms:*

A recommendation of the Medical Executives Conference that standardized claims forms as set up for various county societies was discussed and, on motion duly made and seconded, approved.

19. *1962 House of Delegates Actions:*

The Council reviewed the resolutions resulting from the 1962 House of Delegates and assigned various resolutions to several commissions and committees for study and report back to the Council.

20. *AMA 1968 Meeting:*

On motion duly made and seconded, it was voted to invite the American Medical Association to hold its 1968 annual meeting in San Francisco provided suitable arrangements can be made.

21. *Laboratory Animals:*

Councilor Bullock called attention to three bills now before Congress—HR 3556, HR 1937 and S 3088—which would call for stringent restraints on the use of animals in research where federal funds are in any way involved. He presented a resolution calling for opposition to these measures; on motion duly made and seconded, the Council voted in favor of the resolution.

22. *Future Annual Sessions:*

On motion duly made and seconded, the Council voted to hold the 1963 Annual Session at the Ambassador Hotel, Los Angeles, from March 24 through March 28 and the 1964 Annual Session at the Biltmore Hotel, also in Los Angeles, from March 22 through March 25.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:15 p.m.

CARL E. ANDERSON, M.D., *Chairman*
JOHN HUNTON, *Acting Secretary*

In Memoriam

ABDUN-NUR, ASSED SIMON, Tarzana. Died June 16, 1962, in Encino, aged 75, of metastatic carcinoma of the prostate. Graduate of Northwestern University Medical School, Chicago, Illinois, 1910. Licensed in California in 1921. Doctor Abdun-Nur was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

ANDERSON, JAMES F., Los Angeles. Died May 27, 1962, in Los Angeles, aged 67, of leukemia. Graduate of the College of Physicians and Surgeons, Los Angeles, 1917. Licensed in California in 1917. Doctor Anderson was a member of the Los Angeles County Medical Association.

✣

BARNARD, HAROLD DEWEY, Las Vegas. Died May 7, 1962, in Las Vegas, aged 75, of carcinoma of the lung. Graduate of Cooper Medical College, San Francisco, 1912. Licensed in California in 1912. Doctor Barnard was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

BOYER, WILLIAM FRANCIS, Indio. Died June 7, 1962, in Indio, aged 42, from an accidental gunshot wound. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1943. Licensed in California in 1944. Doctor Boyer was a member of the Riverside County Medical Association.

✣

BRICKLEY, PAUL M., Santa Barbara. Died by drowning, January 11, 1962, aged 44. Graduate of the University of Minnesota Medical School, Minneapolis, 1944. Licensed in California in 1952. Doctor Brickley was a member of the Santa Barbara County Medical Society.

✣

CILLEY, HERBERT ARTHUR, San Jose. Died May 24, 1962, in San Jose, aged 63, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1930. Licensed in California in 1930. Doctor Cilley was a member of the Santa Clara County Medical Society.

✣

DICKINSON, CHARLES CHESTER, Chico. Died May 24, 1962, in Chico, aged 72. Graduate of the University of Illinois College of Medicine, Chicago, 1912. Licensed in California in 1912. Doctor Dickinson was a member of the Siskiyou County Medical Society.

FOGEL, EDWARD THEODORE, Los Angeles. Died May 14, 1962, in Beverly Hills, aged 56, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1932. Licensed in California in 1932. Doctor Fogel was a member of the Los Angeles County Medical Association.

✣

GRAY, GEORGE ALEXANDER, San Jose. Died June 6, 1962, in San Jose, aged 69, of heart disease. Graduate of Rush Medical College, Chicago, Illinois, 1917. Licensed in California in 1920. Doctor Gray was a member of the Santa Clara County Medical Society.

✣

GREEN, GEORGE B., Burlingame. Died February 6, 1962, in Fairfield, Alabama, aged 39, of heart disease. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1949. Licensed in California in 1955. Doctor Green was a member of the San Mateo County Medical Society.

✣

HAGEN, HORACE, Pebble Beach. Died April 26, 1962, in Pebble Beach, aged 63, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1923. Licensed in California in 1924. Doctor Hagen was a member of the San Luis Obispo County Medical Society.

✣

LACEY, JOHN MARK (J. MARK), La Crescenta. Died May 15, 1962, in La Crescenta, aged 80, of cerebral vascular accident. Graduate of the University of Illinois College of Medicine, Chicago, 1914. Licensed in California in 1915. Doctor Lacey was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

LEO, ROBERT J., Visalia. Drowned at sea while fishing, May 30, 1962, aged 46. Graduate of the College of Medical Evangelists School of Medicine, Loma Linda-Los Angeles, 1943. Licensed in California in 1943. Doctor Leo was a member of the Tulare County Medical Society.

✣

LUKE, IAN W., San Mateo. Died May 29, 1962, in Hillsborough, aged 46. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1939. Licensed in California in 1939. Doctor Luke was a member of the San Mateo County Medical Society.

✣

MATTERA, VINCENT J., San Diego. Died June 3, 1962, in San Diego, aged 63. Graduate of Tufts University School of

Medicine, Boston, Massachusetts, 1928. Licensed in California in 1958. Doctor Mattera was a member of the San Diego County Medical Society.

✤

Messenger, Thomas T., Avenal. Died May 24, 1962, in Avenal, aged 59, of heart disease. Graduate of the University of Arkansas School of Medicine, Little Rock, 1937. Licensed in California in 1937. Doctor Messenger was a member of the Kings County Medical Society.

✤

Moore, Chester Biven, Belvedere. Died May 3, 1962, in San Francisco, aged 80. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1910. Licensed in California in 1910. Doctor Moore was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Morrison, Norman Donald, San Mateo. Died May 27, 1962, in San Mateo, aged 85. Graduate of Cooper Medical College, San Francisco, 1904. Licensed in California in 1904. Doctor Morrison was a member of the San Mateo County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✤

Muller, Harold P., Berkeley. Died May 17, 1962, in Berkeley, aged 60, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1929. Licensed in California in 1929. Doctor Muller was a member of the Alameda-Contra Costa Medical Association.

✤

Reeves, Edwin Wiley, Salinas. Died June 10, 1962, aged 72. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1917. Licensed in California in 1917. Doctor Reeves was a member of the Monterey County Medical Society.

✤

Rose, S. Paul, San Mateo. Died in 1962, aged 48, of heart disease. Graduate of Howard University School of Medicine, Washington, D. C., 1942. Licensed in California in 1959. Doctor Rose was a member of the San Mateo County Medical Society.

✤

Rush, Richard Cox, San Fernando. Died May 8, 1962, in San Fernando, aged 74, of heart disease. Graduate of the Medical College of Alabama, Birmingham, 1902. Licensed in California in 1915. Doctor Rush was a member of the Los Angeles County Medical Association.

✤

Simmonds, Raymond J., Sacramento. Died May 7, 1962, in Sacramento, aged 50. Graduate of the Stanford University School of Medicine, Palo Alto-San Francisco, 1937. Licensed in California in 1937. Doctor Simmonds was a member of the Sacramento Medical Society.

✤

Tasher, Dean Charles, San Bernardino. Died May 21, 1962, in San Bernardino, aged 42. Graduate of the University of Chicago, The School of Medicine, Illinois, 1943. Licensed in California in 1954. Doctor Tasher was a member of the San Bernardino County Medical Society.

✤

Tirrell, C. Malcolm (Chester), Redlands. Died June 5, 1962, in Redlands, aged 59, of heart disease. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1928. Licensed in California in 1946. Doctor Tirrell was a member of the San Bernardino County Medical Society.

✤

Walthall, Felix Edward, Poway. Died May 3, 1962, in San Diego, aged 54, of coronary occlusion. Graduate of Emory University School of Medicine, Atlanta, Georgia, 1934. Licensed in California in 1935. Doctor Walthall was a member of the San Diego County Medical Society.

✤

Wedell, William John, San Francisco. Died May 19, 1962, aged 44, of cerebral hemorrhage. Graduate of Cornell University Medical College, New York, New York, 1943. Licensed in California in 1947. Doctor Wedell was a member of the San Francisco Medical Society.

CALIFORNIA MEDICAL ASSOCIATION

1963 annual meeting

Ambassador Hotel, Los Angeles, March 24-27, 1963

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EAR, NOSE AND THROAT . . William F. Baxter, M.D.
762 Altos Oaks Drive, Los Altos

EYE . . . . James F. Kleckner, M.D.
3731 Stocker Street, Los Angeles 8

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383 West Joaquin Avenue, San Leandro

GENERAL SURGERY . . . . . David B. Hinshaw, M.D.
Room 9440, 1200 North State Street, Los Angeles 33

INDUSTRIAL MEDICINE AND SURGERY . . . . Carl E. Nemethi, M.D.
5592 Santa Fe Avenue, Los Angeles 58

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2561 First Avenue, San Diego 3

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ORTHOPEDICS . . . . . . Edwin G. Bavill, Jr., M.D.
450 Sutter Street, San Francisco 8

PATHOLOGY AND BACTERIOLOGY . . . . . . Richard O. Myers, M.D.
Valley Presbyterian Hospital, 15107 Vanowen Street, Van Nuys

PEDIATRICS . . . . Lawrence E. Reck, M.D.
2950 Sixth Avenue, San Diego 3

PHYSICAL MEDICINE . . . . . . Frances Baker, M.D.
1 Tilton Avenue, San Mateo

PREVENTIVE MEDICINE AND PUBLIC HEALTH . . . . . . Herbert Bauer, M.D.
Yolo County Health Department, P.O. Box 532, Woodland

PSYCHIATRY AND NEUROLOGY . Henry S. Calany, M.D.
411 30th Street, Oakland 9

RADIOLOGY . . . . Walter Gaines, M.D.
120 St. Matthews Avenue, San Mateo

UROLOGY . . . . Henry Badner, M.D.
4911 Van Nuys Boulevard, Van Nuys

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

FOR YEARS, science has probed alcoholics for personality characteristics that would distinguish them from normal drinkers. So far, these efforts have been unsuccessful. Alcoholism seems to have no regard for station, rank or breeding. It refuses to be identified through standard psychological tests and eludes attempts to classify it as a condition peculiar to certain groups.

In studying the possible causes of the many alcoholics which appear to exist in our society, investigators have now turned to behavioral evidence as a means of distinguishing groups of persons with a greater risk of becoming alcoholics than others. Some researchers believe that what friends, neighbors and acquaintances observe about the drinking behavior of an individual may be the first clues to the possible onset of alcoholism.

A report on what 100 community leaders in California think are signs of incipient alcoholism was prepared by the State Department of Public Health in 1959, and a sequel was released in May of this year. The recent report, "The Development of a Screening Device for Risk Populations," shows how the answers of the community leaders were used to develop a single, brief questionnaire which delves into a respondent's physical and emotional complaints, his situational problems and what he does about them, and his concept of his own personality.

This questionnaire was tested on more than 200 volunteers over a period of five months, and the information originally obtained from the community leaders has been substantiated by the questionnaire results. Besides mentioning the extreme reactions of some drinkers to daily problems and their propensity for physical and emotional ills, the community leaders identified many persons with drinking problems as being "lonely, inadequate, or weak-willed." These observations were borne out in the answers of some of the volunteer respondents to the questionnaire, who thus could be designated as possibly more "at risk" of alcoholism than others.

This does not mean that a way has been found to predict who may become an alcoholic, because the questionnaire is still a crude implement which can be applied only to large groups in the population. It must be tested further by other investigators before decisions can be reached on its validity and eventual use in research on the etiology of alcoholism.

The report, Publication No. 7 in the Alcoholism and California series, is available to interested persons from the Division of Alcoholic Rehabilitation, 2151 Berkeley Way, Berkeley.

* * *

Pertussis, like diphtheria, is a preventable disease, yet there are between 2,000 and 4,000 cases and some deaths reported each year in California.

The deaths occur in children of early age—one-third of them in infants less than three months of age, one-half in those less than six months of age and nearly 90 per cent in those under the age of two years. Although the same immunizing agent is used to prevent both diphtheria and pertussis, it is curious that, comparing the year 1960 with 1950, diphtheria showed a drop of 99.6 per cent (268 cases in 1950 and 1 in 1960), while pertussis decreased only 70.4 per cent (6,613 cases in 1950 and 1,957 in 1960). It is believed that cases and deaths from both diseases are occurring in unvaccinated children.

* * *

Official State road tests of devices for control of automobile exhaust are now under way. This represents a major break-through in California's efforts to control smog, since it is estimated that general use of effective exhaust control devices could cut automobile-created air pollution as much as 65 per cent.

Testing has been started with the installation of prototypes of three exhaust control devices on 75 "average" automobiles. A fourth device is expected to be placed for testing on another 25 cars in the near future. Two of the devices are of the catalytic type and one is a direct-flame afterburner. The devices were accepted for testing by the State Motor Vehicle Pollution Control Board.

The cars equipped with these devices will be driven under a variety of conditions for at least 12,000 miles each to test for effectiveness, safety, noise, odor and durability. The tests will take approximately nine months to complete.

INFORMATION

HOSPITAL BILLS

What Portion Is Paid by Insurance?

A Report of the Bureau of Research and Planning, California Medical Association

> A two-year survey result—ending some 18 months ago and just released—reveals that 68 per cent of all short-stay hospital discharges had hospitalization coverage. Insurance paid three-fourths or more of the bill for over 75 per cent of those covered.
>
> One-half of the discharges in the 65+ age group were covered. Almost 60 per cent of this group had three-fourths or more of the hospital bill paid by voluntary health insurance.
>
> The 65+ group with family income under $4,000 had better protection than age groups under age 45.
>
> The highest per cent of coverage was in the 45 to 64 age group where over 75 per cent of the discharges had coverage, with insurance paying more than three-fourths of the bill. This is the group which is likely to retain coverage upon retirement.

A REPORT based upon data collected through household interviews over a two-year period (July 1958 to June 1960) in the U. S. National Health Survey* contains information on the extent of hospitalization coverage for persons discharged from short-stay hospitals.

The following tables represent a few of the highlights of the recently published report.

Table 1 reveals that among all persons discharged, 68 per cent had some portion of the hospital bill paid by voluntary health insurance, with 51 per cent reporting that three-fourths or more of the bill was paid. Slightly more than half of all persons aged 65 and over had hospital coverage at that time, with 30 per cent reporting that three-fourths or more of the bill was paid. Thus, in the 65+ group, almost 60 per cent of all persons with coverage who were discharged from hospital had three-fourths or more of the bill paid by insurance.

A revealing statistic is that in 76 per cent of discharges in the 45 to 64 age group the patients had coverage for hospitalization. Approximately 75 per cent of this group had three-fourths or more of the bill paid. This is the group in which continuation of coverage and conversion upon retirement has shown the most rapid progress, according to the Health Insurance Council. (A study by the Department of Health, Education, and Welfare analyzing coverage under collectively bargained plans discloses that in more than 95 per cent of collectively bargained group plans, older workers may maintain health insurance coverage upon retirement.)

The report states that: "For approximately 32 per cent of the hospital discharges it was reported that

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*Source: U. S. Dept. HEW, Health Statistics, Series B, No. 30, Nov. 1961.

TABLE 1.—*Per cent of persons discharged from short-stay hospitals who had any insurance payment for the hospital bill, the per cent who had three-fourths or more of their bill paid by insurance, and the per cent of those with any insurance payment who had three-fourths or more of the bill paid by insurance (United States, July 1958 to June 1960).*

Both Sexes	All Ages	Under 15	15 to 44	45 to 64	65+
Total discharges:					
1. Per cent with any insurance payment for the bill	68.0	72.1	66.9	76.0	51.2
2. Per cent with three-fourths or more of bill paid by insurance	51.3	58.3	50.6	58.0	30.3
Per cent of discharges with any insurance payment who had three-fourths or more of the bill paid by insurance (line 2 ÷ line 1)	75.4	80.9	75.6	76.3	59.2

TABLE 2.—*Per cent of discharges for some insurance payment for the hospital bill, grouped by annual family income: Discharges from short-stay hospitals (United States, July 1958 to June 1960).*

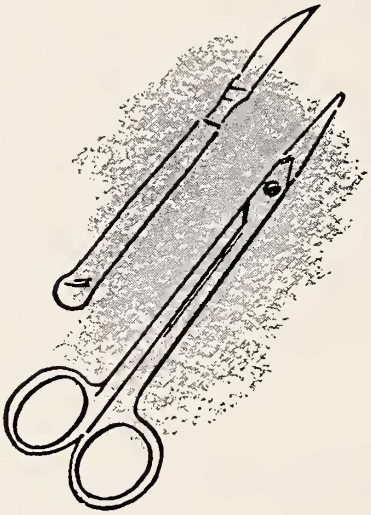
Both Sexes	All Ages	Under 15	15 to 44	45 to 64	65+
Family income:					
All incomes	68.0	72.1	66.9	76.0	51.2
Under $2,000	39.6	32.9	33.0	50.1	42.7
$2,000 to $3,999	59.2	59.4	54.7	71.7	59.8
$4,000 to $6,999	79.0	81.1	78.0	83.8	63.5
$7,000+	81.0	80.4	81.3	89.0	51.1
Unknown	58.8	71.9	51.2	69.4	45.6

there was not any insurance payment for the hospital bill. It should be noted that this does not mean that for almost one-third of the hospital discharges these individuals had to pay for the entire hospital bill out of their own or their family's funds. Sources other than insurance are used to help finance the cost of hospital care. In addition to the hospital care provided for veterans by the Veterans Administration . . ., the federal government provides care for other groups such as dependents of members of the Armed Forces, merchant seamen, and American Indians. State and local governments, health agencies, and charitable organizations spend large sums to help finance the cost of hospital services, and, finally, friends, neighbors, relatives, and employers on many occasions help to share the burden of a large hospital bill."

Table 2 indicates the percentage of discharges, by age and income group, in which insurance paid some portion or all of the bill. As previously indicated, in 68 per cent of all discharges insurance payment covered some portions of expenses. The greater the family income, the larger was the proportion of discharges covered by insurance. In the $2,000 to $3,999 income group, persons 65 and over had a better rate of coverage than did persons under 45 years of age. Significantly, in the lowest income group (under $2,000) persons aged 65 and over had a higher rate than persons under 45.

It should be noted that the foregoing data reflect information secured up to 18 months ago. Progress in coverage for the total population has been significant, with enrollment of persons 65 and over representing the most striking gains, according to the Health Insurance Council.

California Medical Association, 693 Sutter Street, San Francisco 2.



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

To EACH OF YOU—please accept our special greetings from YOUR State Auxiliary.

It has been a busy few weeks since Convention in San Francisco. Weeks filled with planning, with coordinating, and with traveling . . . all of which have been tremendously interesting.

Planning—for the year ahead, but especially for the Fall Conference to be held in Palm Springs at the Riviera Hotel, September 25, 26, 27, 1962, with Mrs. Arthur T. Bailey, Chairman. This Conference is a work-shop type meeting for the State officers and chairmen and for the County presidents and presidents-elect. Invitations will also be extended to members of the county boards who may wish to attend.

Coordinating—the year's work with the state board officers and chairmen. Outlining activities and setting up the articles for the annual Year Book, being compiled by the state corresponding secretary, Mrs. Paul E. Travis, to be ready for distribution at Fall Conference. This Year Book is published by the California Medical Association under the direction of the Auxiliary liaison officer, Mr. Jack B. Collins.

Traveling—to visit the component county Auxiliaries, which is the privilege of the President of the Woman's Auxiliary to the California Medical Association. It is indeed a genuine pleasure, during the year, to visit the members in their home counties; to hear the reports of accomplished projects; and to listen to plans for even greater auxiliary activities.

On one trip I drove 2,018 miles from Los Angeles to the northernmost part of our beautiful state. Solano County was my first visit. Dropping south again, I visited San Mateo County, then up to Placer-Nevada County where the Auxiliary met in a joint meeting with the County Medical Association. Driving north around the very large Clear Lake, I was reminded of parts of Switzerland—where little towns nestle at the lake's edge. The redwoods in the mist provided a delightful mood as I entered Humboldt-Del Norte County for its meeting in Eureka. A five-hour drive through the scenic Trinity National Forest took me to Redding for a joint meeting with the Shasta-Trinity and Tehama Counties. Santa Cruz County was next on my itinerary, and then on to San Luis Obispo County . . . another Auxiliary which meets jointly with its County Medical Association.

It was my privilege to install the officers of my own Los Angeles County Auxiliary during a two-day "visit" at home. Two other trips, by plane, took me to Marin County and to Contra Costa County Auxiliaries.

I wish I had the space to tell you in detail about these meetings; of the friendliness; of the tremendous amount of work which is being accomplished; and of the energetic, enthusiastic members—physicians' wives—serving their County Medical Associations in an effective manner.

This is YOUR Auxiliary.

Is YOUR wife a member? We need her!

It is my hope that YOUR County Medical Association gives YOUR County Auxiliary its fullest support!

MRS. FLOYD K. ANDERSON
President, Woman's Auxiliary to the
California Medical Association

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

New patients are now being accepted into the **preschool deaf program** at Children's Hospital of the East Bay. The program has been established to provide professional assistance to parents of preschool deaf and hard-of-hearing children so an early beginning can be made in helping them to communicate through speech and lip reading.

The program includes **diagnostic, therapeutic, educational and counseling** services. Education of the parents is emphasized, so the parents can continue the therapy techniques at home.

Further information may be obtained by writing or calling Mr. Ray V. Lage, director, preschool deaf program, Children's Hospital of the East Bay, 51st and Grove Streets, Oakland 9, California.

LOS ANGELES

Appointment of **Dr. Sherman Mellinkoff** as dean of the University of California at Los Angeles School of Medicine was announced recently. He succeeded **Dr. Stafford Warren,** who on July 1 assumed the new post of vice chancellor, health sciences.

The new dean, who received his M.D. degree from Stanford University School of Medicine in 1944, has been a member of the U.C.L.A. medical school faculty since 1953 when he joined the staff as assistant professor of medicine.

* * *

The Los Angeles Pediatric Society will present its nineteenth **Brennemann Lecture** Series November 7 and 8, 1962, at the Ambassador Hotel. Guest speakers will be **Dr. Albert B. Sabin,** Children's Hospital Research Foundation, Cincinnati, and **Dr. Malcolm A. Holliday,** Department of Pediatrics, Children's Hospital, Pittsburgh.

RIVERSIDE

Dr. Peter Lewis, Riverside, has been installed as president of the Riverside County Heart Association and Dr. Roger Ridley has been elected president-elect.

SAN FRANCISCO

The appointment of **Dr. Harry Leeb** as director of the San Francisco VA Regional Office Outpatient Clinic at 49 Fourth Street was announced recently. Dr. Leeb was a medical staff member at the Oakland VA Hospital for several years. Immediately before his recent appointment he was a deputy commander of a 1,000-bed reserve hospital centered at the Hamilton Air Force Base.

SANTA CLARA

Two new **research centers for the investigation of human diseases**—including the first ever established by the National Institutes of Health for the **study of premature infants**—will be set up at Stanford Medical Center with grants totaling $797,305 from the United States Public Health Service.

The new grants make Stanford University School of Medicine the first medical school in the country to have three NIH-supported clinical research centers. Investigations of new methods of treating cancer with x-rays and other radiation are already under way with a $943,412 federal grant announced last year.

The study of premature infants will be financed with a $267,305 grant. The remaining $530,000 will support a **general research facility** in which certain major problems such as tissue grafting, growth and development, function of the nervous system, and resistance and susceptibility to infection will be attacked over several years.

First patients will be admitted to the Clinical Research Center for Premature Infants after August 1. The General Clinical Research Center will open in midwinter with 16 beds. The grants for both centers cover full hospitalization expenses of patients who are admitted to the units.

* * *

Stanford University's Lane Medical Library is to receive $135,837 from the estate of Margaret L. Potter, who worked at the library for 40 years. Miss Potter died a little more than a year ago. Her will put no restrictions on how the bequest was to be used.

The University will use the money to endow **The Margaret L. Potter Fund,** and will allocate the perpetual income to the Lane Library.

Under the terms of the special five-year grant of the Ford Foundation to Stanford in 1960, Miss Potter's bequest will bring an additional $45,279 to Stanford. The Foundation is providing one dollar for each three dollars given to the University during the life of the grant.

GENERAL

Availability of **alphabetical lists of registered nurses,** county by county, has been announced by the California Board of Nursing Education and Nurse Registration. The lists for all the counties may be obtained from the Board at 1021 O Street, Sacramento 14. The combined directory for all the counties in the state will cost forty dollars, and lists for any of the counties separately are available at 50 cents a page.

* * *

The **American Urological Association** has announced the opening of competition for its annual award of $1000 for **essays on the result of some clinical or laboratory research** in urology (first prize of $250 for clinical research, first prize of $250 for laboratory research; second prize of $150 for clinical research, second prize of $150 for laboratory research; third prize of $100 for clinical research; third prize of $100 for laboratory research).

Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing clinical or laboratory research work in Urology. Animal research is not necessary.

The first two first prize essays will appear on the program of the meeting of the American Urological Association to be held at the Sheraton-Jefferson Hotel, St. Louis, May 13-16, 1963.

Full particulars may be obtained from the executive secretary of the Association, William P. Didusch, 1120 N. Charles Street, Baltimore 1, Maryland. Essays must be in his hands before November 15, 1962.

THE PHYSICIAN'S *Bookshelf*

AN ATLAS OF HEAD AND NECK SURGERY—John M. Lore, Jr., M.D., F.A.C.S., Attending Surgeon, Good Samaritan Hospital, Suffern, New York; Associate Attending Surgeon, Head and Neck Service, Department of Surgery, Saint Clare's Hospital, New York, N. Y.; Consultant Surgeon, Tuxedo Memorial Hospital, Tuxedo, N. Y. Illustrated by Robert Wabnitz, Director of Medical Illustration, University of Rochester Medical Center, Rochester, N. Y. W. B. Saunders Company, Philadelphia, Pa., 1962. 490 pages, $25.00.

This atlas of head and neck surgery has three features which will be of interest and concern to those seeking a good book on head and neck surgery. These features are:

1. A general surgical rather than a specialty approach to the problems of head and neck surgery.

2. A new format in medical books consisting of illustrations on one page and brief descriptive comments on the illustrations step by step on the opposite page. These two pages face each other so that one need not turn the page to get the complete message from the excellent illustrations.

3. The cost of $25.00 for a book of regional surgical scope.

The concept of approaching head and neck surgery from a general rather than a specialty standpoint has resulted in a book which bridges the barriers between specialties. Indeed, plastic surgery, general surgery, neurosurgery and traumatic surgery of the head and neck are reasonably well presented in their major attributes. The book concludes a sectional radiographic anatomy, a chapter on general operative procedures, and then proceeds to cover topics of the sinuses, nose, fractures of the facial bones, face, eyelids, ears, lips, parotid and salivary tumors, neck, thyroid and parathyroid, larynx, esophagus and even vascular surgery of the head and neck of superior mediastinum. There is no theoretical discussion offered in the text, no interpretation of current practices and methods. There is merely a recounting of the good procedures that the author has found most useful in each of these areas in his extensive experience.

The format of the book is beautiful and unique, with all the illustrations being done by one artist and being presented in a uniform style. On the side opposite the excellent illustrations the technical steps and high points of the operative procedure are detailed step by step, and each step corresponds numerically to an illustration on the opposite page which depicts the operative procedure as it progresses. This makes the visual presentation of material excellent, straightforward and practical. There is minimal discussion. The illustrations are beautiful and done on superb quality paper. The cost of $25.00 seems at first startling, but if one recognizes the beauty of illustrations and the quality of paper on which they are presented the cost dwindles in significance.

The author is to be commended on excellent illustrative work of the major aspects of head and neck surgery, and for bridging the barriers between the various specialties of general, plastic, otorhinological and vascular surgery and problems of the head and neck. The book can be recommended as an excellent reference book for surgical techniques in head and neck surgery.

Victor Richards, M.D.

* * *

INTERNAL MEDICINE IN WORLD WAR II— Volume I, Activities of Medical Consultants (Medical Department, United States Army)—Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army, Colonel John Boyd Coates, Jr., MC, Editor in Chief, and W. Paul Havens, Jr., M.D., Editor for Internal Medicine. Office of the Surgeon General, Department of the Army, Washington, D. C., 1961. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price $7.50 (Buckram). 880 pages.

To many of us the work of the consultants in World War II was probably the most important single factor in the maintenance of a high standard of medical practice throughout the army. This book gives an informative and frank account of the work of the consultants in Medicine both in the service commands and in the theaters of operation during this period. The various authors, consultants all, do not hesitate to criticize both the Army at large and the Army Medical Corps, when criticism is indicated, and at the same time, point out the shortcomings of many civilian doctors in their army duties. It was particularly pleased to find universal condemnation of those chiefs of service who confined themselves to paper work instead of getting out on the wards and practicing medicine.

I recommend this volume as entertaining and nostalgic reading for all who served in the Army Medical Corps and as a source of valuable information for those interested in the proper functioning of doctors in the U. S. Army.

G. B. Robson, M.D.

* * *

VECTOR ELECTROCARDIOGRAPHY — Herman N. Uhley, M.D., Assistant Chief, Department of Medicine, Mount Zion Hospital and Medical Center, San Francisco, California. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1962. 339 pages, $8.50.

This textbook demonstrates admirably the derivation of the vectorcardiogram from the electrocardiogram and vice versa. The fundamentals of the formation of the common patterns encountered in electrocardiography are illustrated in the form of "live" movies. Each frame is explained in simple straightforward fashion so that the reader can formulate a conceptual basis as each pattern unfolds. The only criticism of the book is the small size of the sketches.

In summary, this book will serve as a highly-recommended introductory text for those beginning vectorcardiography and for those who would like a unique way of teaching vectorcardiography and electrocardiography.

Joseph Kaufman, M.D.

POSTPARTUM PSYCHIATRIC PROBLEMS—James Alexander Hamilton, Ph.D., M.D., Associate Clinical Professor of Psychiatry, Stanford University School of Medicine, Stanford, California, Chief of Service, Psychiatry, Saint Francis Memorial Hospital, San Francisco, California. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1962. 156 pages, $6.85.

Dr. Hamilton succeeds quite noticeably with at least two of the three avowed aims of his book. In his effort to provide the obstetrician, general practitioner, or pediatrician with diagnostic criteria and clinical data to help them recognize postpartum psychiatric reactions, he is quite successful. In collecting and integrating widely scattered information bearing on the diagnosis and treatment of postpartum psychiatric problems and in further emphasizing the significance of postpartum psychiatric illness, he has done a noteworthy job. In his effort to identify and substantiate physiological factors in the etiology of postpartum mental illness, he is noticeably less successful. This brief but comprehensive book is lucidly written and excellently organized in a way which makes reading it both as a reference material or for general information equally feasible. The author has sifted through the literature and has referred to most of the significant works of the past 200 years. He draws proper attention to the fact that there has been little in the way of critical study of postpartum psychiatric reactions. The author has briefly mentioned those studies which he finds most informative to his points of view and has, I feel, pointed out the proper areas for additional research.

Although written by a psychiatrist, presumably for psychiatrists as well as other physicians, the level of psychiatric sophistication is rather prosaic. In his efforts to be comprehensive about treatment methods for the nonpsychiatric physician, he is quite inconsistent and contradictory. For example, at times he emphasizes the necessity for the use of electric shock therapy in postpartum reactions and subsequently mentions the contraindications which make it quite unfeasible for use in the first weeks of the puerperium.

One noteworthy factor of Dr. Hamilton's work is his recognition of the limitations of his own hypotheses. In the final chapters of his book he points out that his suppositions suffer from the same lack of validation and scientific control as those studies which he has criticized earlier in the body of his work which do not agree with his basically physiological theory of the etiology of postpartum psychiatric illness. There are, however, two major areas which seem conspicuously absent from a work of this type, which attempts to deal comprehensively with postpartum psychiatric problems. The first is the growing body of careful work, such as that of Bibring and her coworkers, which shows that normal pregnancy constitutes a major psychiatric stress to the otherwise emotionally healthy and well-integrated personality. Furthermore, the author gives very short shrift to those clinicians who feel that antepartum psychiatric difficulties are always prominent in those patients who develop puerperal psychoses. The significance of the antepartum emotional stresses inherent in normal pregnancy are primarily in the direction of a psychogenic etiology. They do not, however, exclude a physiological component to puerperal illness, and it may be that this illness can best be understood as a psychophysiologic reaction. Another criticism of the author's presentation is his failure to emphasize the effects of physical treatment modalities and pharmacologic agents on target symptoms rather than on disease entities. This is most striking in his consideration of the effects of triiodothyronine in treatment of postpartum psychoses. He tends to use it as a specific remedy, although he overlooks the normal psychological effects of thyroid hormone as a stimulant and later suggests that the drug is contraindicated in those postpartum syndromes characterized by excitement and delirium. It would seem probable that the effects of thyroid hormone on depressed states might well be related to those stimulating psychological effects rather than a more esoteric relationship to puerperal illness.

The author presents some very provocative endocrinological work which might elucidate a physiologic etiology for this illness. He makes the point that the acute manifestations of postpartum psychiatric reactions ordinarily have a two to four day latent period following birth before they manifest themselves, and he relates this to a presumed organic cause. There are other events, notably the depressions which occur following total laryngectomy, which have the same three to four day latent period, which have presumably no definable organic cause. Finally, in speaking with women who have suffered postpartum depression of a less than psychotic degree, one is struck by the fact that they most frequently relate their affect to environmental stresses, changes in self-concept, or interpersonal relationships, and do not manifest the bewilderment as to the cause of their reactions which is so prominent in organically caused psychoses. The chapters describing the psychodynamics of the postpartum adjustment and the treatment of postpartum sexual problems are particularly lucid and would in themselves well justify the reading of Dr. Hamilton's book.

JOSHUA S. GOLDEN, M.D.

* * *

RADIOACTIVE ISOTOPES IN MEDICINE AND BIOLOGY: MEDICINE—Second Edition—Solomon Silver, M.D., Attending Physician; Chief, Thyroid Clinic, The Mount Sinai Hospital; Associate Clinical Professor of Medicine, College of Physicians and Surgeons, Columbia University, New York. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1962. 347 pages, 49 illustrations, $8.00.

In phase with the expansion in the medical uses of radioactive isotopes, one of the best books in the field, "Radioactive Isotopes in Clinical Practice," by Quimby, Feitelberg and Silver, has in its second edition expanded to two volumes: "Basic Physics and Instrumentation," by Quimby and Feitelberg, and this work on medical applications by Dr. Silver, who is associated with Mt. Sinai Hospital and Columbia University in New York.

By leaving the discussion of physics to his colleagues, Dr. Silver has more space to consider in detail the clinical applications of isotopes. About half the book is devoted to the physiology, diagnosis and treatment of the thyroid and its disorders. Radioactive iodine was among the first, and is still by far the most important of the artificial isotopes in its clinical applications. This is a fine summary of our present understanding of the thyroid and its many ways of misbehaving.

Dr. Silver has absorbed an enormous mass of literature, digested it, and produced lucid and up-to-date discussions of iron kinetics and other hematological applications, measurements of body fluid and electrolyte components, circulation studies, isotope treatment of malignancies, and the latest in kidney and liver functions and scanning of individual organs. Some of the elements now finding clinical use have the ring of science-fiction—iridium, rubidium, tantalum, krypton, lutecium—indeed this entire field of medicine was little more than science-fiction sixteen years ago.

This is a well-written book on a subject of ever-increasing importance, with a balanced presentation of fundamental physiology and clinical applications. It is highly recommended to users of radioactive isotopes.

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Continuous administration of Enovid is also utilized in habitual abortion, providing balanced hormonal support of the endometrium and permitting continuation of pregnancy.

***Emergency* Enovid Therapy.** In high doses, Enovid has a prompt hemostatic effect and will usually control severe dysfunctional uterine bleeding within 6 to 24 hours. Prompt, high-dosage administration of Enovid is also a rational recourse in threatened abortion.

A Note on Safety. The effects of Enovid have been studied in more than 3,500 women during more than 49,500 menstrual cycles, representing 3,800 woman-years of experience. Enovid has been administered *cyclically* to the same patients for as long as five and one-half years for ovulation inhibition without serious complication. For the present, however, Enovid is not recommended for more than two years, although it is expected that this period will be lengthened as experience continues to accumulate. There has been no impairment of subsequent fertility and no effect on children born to women who conceived after discontinuing Enovid therapy.

The basic dosage of Enovid is 5 mg. daily in *cyclic* therapy, beginning on day 5 through day 24 (20 daily doses). Higher doses may be used to prevent or to control occasional "spotting" or breakthrough bleeding during Enovid therapy or for rapid effect in the emergency treatment of dysfunctional uterine bleeding or threatened abortion.

Enovid is available in tablets of 5 mg. and of 10 mg. Available on request: literature and references covering more than six years of intensive clinical study.

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Measles Immunity May Not Depend on Reexposure

The persistence of immunity to measles after an individual has had the disease apparently does not depend on repeated exposure to the measles virus, three New York City researchers said recently.

If true, they said, a single vaccination against measles may provide lifetime immunity.

Samuel Karelitz, M.D., Floyd S. Markham, Ph.D., and James M. Ruegsegger, M.D., made a study of measles immunity among 49 adults and reported their findings in the May *American Journal of Diseases of Children*, published by the American Medical Association.

The level of immunity to measles was determined among 25 pediatricians who had been repeatedly exposed to measles-infected children and among 27 other adults, none of whom was known to have been exposed to measles during the preceding five years, the authors said.

When the degree of immunity between the two groups was compared, they said, there was no significant difference.

"The exact mechanism of persistent immunity to the measles virus has not yet been established," the researchers concluded. "It appears, however, that repeated reexposure to persons with clinical measles is not the answer. Hopefully this may suggest that a single vaccination with live measles virus vaccine may suffice. Time will tell whether this is so."

Development of both live and killed measles virus vaccines is in the experimental stage.

Antibacterial Drugs Prevent Travelers' Bane

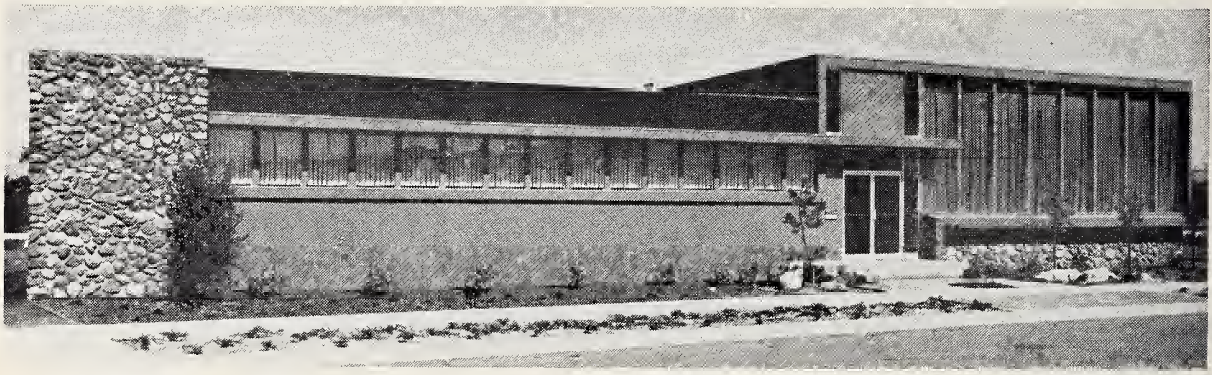
(Continued from Page 29)

ular medicine used by travelers, iodochlorhydroxyquin, "was no more effective than a placebo.

In its mildest form, tourist diarrhea does not interfere with the traveler's activities, they said. However, in its more severe form, they said, it is complicated by nausea, vomiting, fever, chills, cramps and joint and muscle pains and may produce serious complications in the debilitated. The illness generally lasts from one to three days, but may persist for a week or more, they said.

No harmful side effects were observed with either drug during the study, the researchers said. However, they stressed that those taking drugs were young, healthy, free from any drug allergy and were subject to daily scrutiny while the drug was administered in low doses for only two weeks.

"It requires no great medical sagacity to predict that if such drugs are administered without adequate precautions to the half-million annual visitors to Mexico, toxic symptoms will occur," they said.



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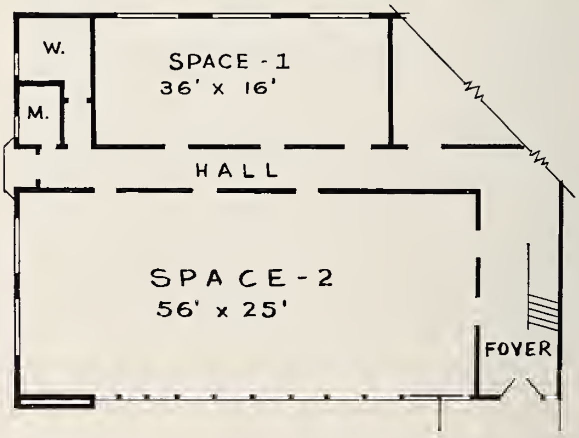

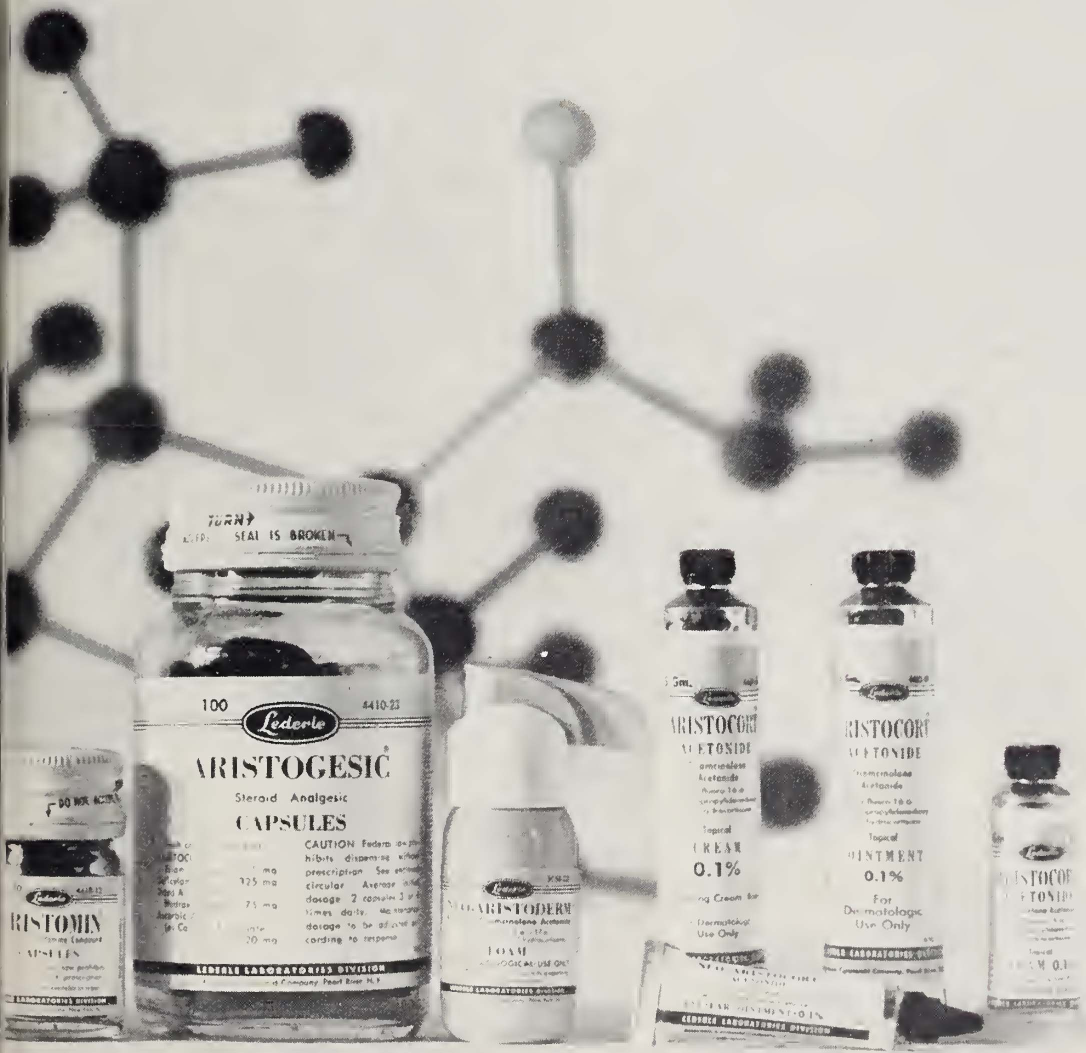
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Niacinamide (Vitamin B_3)	5.0 mg
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Blow to Chest Restarts Arrested Heart

A heart that had stopped beating was restarted by a sharp blow to the chest, Dr. Felix Feraru, New York City, reported recently.

Writing in the May 19 *Journal of the American Medical Association*, Dr. Feraru said he struck a sharp blow with the side of his clenched fist to the chest of a patient whose heart stopped beating during abdominal surgery. The heartbeat resumed immediately, he said, but subsequently stopped again and was again restarted by two similar blows to the chest overlying the heart.

When the patient's heart stopped beating a third time, he said, the chest was opened and the heart massaged by hand. However, the heartbeat could not be restarted and the 67-year-old man died, he said. Examination showed the patient had advanced coronary heart disease, Dr. Feraru said.

The case is reported because it furnishes "absolute proof" that a sharp blow can restart the arrested heart, Dr. Feraru said.

VAGINAL THRUSH TREATED WITH BIS-2-HYDROXY-5-CHLOROPHENYL SULFIDE—W. L. Whitehouse and C. H. Porteous. Lancet—Vol. 1:506 (March 10) 1962.

Bis-2-hydroxy-5-chlorophenyl sulfide was investigated in the treatment of monilial vaginitis (32 cases) and found to compare favorably with gentian violet paintings and nystatin (fungicidin) (28 cases).

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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

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(Continued from Page 27)

tions compared to isoniazid-resistant, susceptible, and "no organism" cases. In resections in patients with streptomycin-resistant tubercle bacilli, the proportion of complications was reduced using effective drugs, that is, kanamycin, viomycin, and sulfisoxazole in the noncontaminated group.

* * *

Acute Pericarditis with Subsequent Clinical Rheumatoid Arthritis—L. A. Grossman et al. Arch. Intern. Med.—Vol. 109:665 (June) 1962.

Acute pericarditis with effusion was observed in 3 patients. Each had a left pleural effusion. Sections of the pericardium, pleura and lung did not reveal any specific pathological lesion. Negative cultures for acid-fast bacteria, fungi, and viruses were obtained from the exudates and excised tissues. The pericarditis heralded a clinical picture of rheumatoid arthritis. The possibility of later manifestations of other collagen disorders exists.

* * *

Carisoprodol in the Treatment of Tetany—J. Jesserer. Deutsch Med. Wschr.—Vol. 87:360 (Feb. 26) 1962.

Carisoprodol (Sanoma or Soma) is N-isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate. It is chemically related to meprobamate. In animal experiments it shows the characteristics of a muscle relaxant. For this reason it has been used to counteract muscle spasms. The author used it in 11 patients, 8 of whom had idiopathic tetany and 3 had postoperative insufficiency of the parthyroids. Tablets containing 350 mg. of carisoprodol were given 2 to 4 times daily. These doses suppressed the tetanic muscle spasms without producing undesirable side effects. In a patient with hysterical pseudotetany the drug was without effect. The author recommends that carisoprodol be tried in other cases of tetany.

* * *

Syphilis Today and Its Consequences—F. R. Gomila, Jr. J. Louisiana Med. Soc.—Vol. 114:82 (March) 1962.

The physician must recognize that syphilis remains a danger and that methods of detection must be routinely employed. The indiscriminate use of penicillin has masked many early manifestations of syphilis—many times dooming people to a later life of blindness, insanity, neurologic complications, paresis, etc. A person should not be given penicillin until the doctor, by various tests, has ruled out the possibility of a lurking treponema pallidum. Many physicians and dermatologists are thinking of syphilis as a rare disease, but statistics have proven that syphilis definitely is not dead. The problems in venereal disease control today

(Continued on Page 72)

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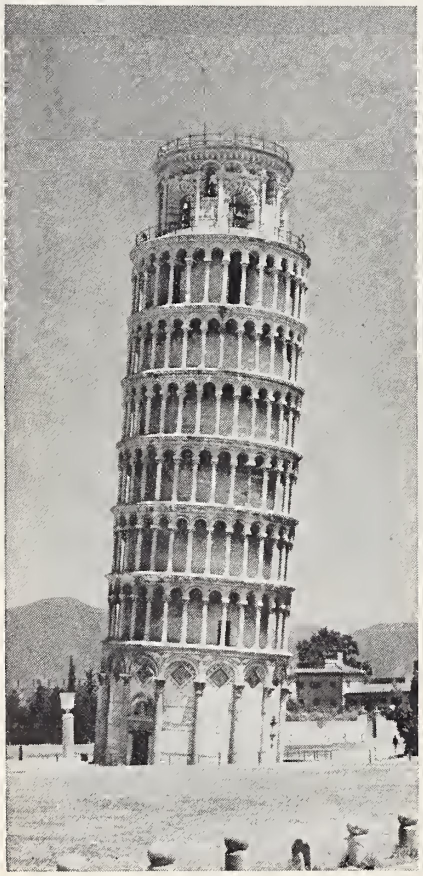

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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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1. Borota, A., and Grinell, R. N.: J. Amer. Geriatrics Soc., 10:413, 1962.
2. Spoor, H. J.: N.Y. State J. M. 58:3292, 1958.
3. Lubowe, I. I.: Western Med. 1:45, 1960.
4. Weissberg, G.: Clin. Med. 7:1161, 1960.

Second Oral Contraceptive Reported 100 Per Cent Effective

A second oral contraceptive recently was reported 100 per cent effective among more than 500 women.

Two studies on the synthetic hormone, norethindrone, were reported in the May 5 *Journal of the American Medical Association.*

No pregnacies occurred in either study group when the pill was taken precisely as prescribed, one pill a day for 20 days of each menstrual cycle.

Norethindrone, which produces many of the same effects as the female sex hormone progesterone, is closely related to norethynodrel, the first oral contraceptive to become available on a prescription basis in this country. Norethynodrel also has proved completely effective when taken strictly according to schedule. Norethindrone, introduced in 1957, has not been marketed as a contraceptive. Both drugs inhibit ovulation.

In the first study, 364 women seen at a Mexico City clinic were studied over a period of 32 months.

"No patient who followed the instructions faithfully became pregnant," Drs. Edris Rice-Wray, Miguel Schulz-Contreras, Irma Guerrero and Alberto Aranda-Rosell, Mexico City, said.

Only 10 discontinued the method because of unpleasant reactions, they said. Side effects were not harmful, simply annoying, they said. This method, they concluded, proved harmless and effective.

The second study took place in San Antonio, Tex., among 210 women, 84 per cent of whom were of Mexican extraction. Eighty per cent of the group had used norethindrone for two years or more and 28 per cent for three years or more, according to Joseph W. Goldzieher, M.D., Louis E. Moses, M.D., and Lucy T. Ellis, San Antonio.

"Since the inception of this study there has not been a single unplanned pregnancy," they said.

None of the study group stopped taking the pill because of side effects, they said.

In both studies, pregnancies occurred after the patients stopped taking the pill. There were no abnormalities in these offspring, they said.

Physician Population Boosted By 4,500

The physician population of the United States and its possessions increased by about 4,500 in 1961, the American Medical Association reported recently.

Medical licensure statistics for 1961, compiled by the A.M.A.'s Council on Medical Education and Hospitals, were published in the June 9 *Journal of the American Medical Association.*

A total of 8,023 first licenses to practice medicine and surgery were issued in 1961, the report showed. Since approximately 3,500 physicians died, the physician population increased by about 4,500, compared with a net gain of about 4,330 in 1960.

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1 "significant hearing improvement" occurred with Arlidin in 32 of 75 patients with recent onset hearing impairment due to labyrinthine artery ischemia.

Rubin, W. and Anderson, J. R.: Angiology 9:256, 1958.

3 Arlidin "appears to be one of the most satisfactory [vasodilators], having the advantages of minimal side effects, being well tolerated and possessing a sustained action" in improving circulation of the inner ear.

Seymour, J. C.: Laryngology & Otology 74:133, 1960.

Of 8,714 applicants for licensure by written examination, 7,650 passed while 1,064 (12.2 per cent) failed, the report showed. However, the rate of failure in approved medical schools was 2.8 per cent. Twenty-six approved schools had no failures among their graduates.

The greatest number of graduates from any one school to be examined was 214 from the University of Tennessee College of Medicine, the report said.

Statistics also were reported on the Educational Council for Foreign Medical Graduates, founded in 1957 to certify that foreign-trained physicians entering the United States had an education equivalent to that of graduates of approved medical schools in this country.

The Council, which has held eight qualification examinations for foreign medical graduates, said the "net effect" of the ECFMG certification plan has been not to restrict but rather to increase both the number and the quality of foreign medical graduates coming to the United States for graduate training in hospitals.

In 1961, more than 3,600 foreign medical graduates were qualified directly from abroad by the ECFMG, the council said. The number of foreign medical graduates taking the ECFMG examination abroad is now greater than the number taking it in the United States, the Council said.

Emotional Problems Rank Third Among University Students

Emotional problems ranked third behind respiratory and skin diseases among university students, a 10-year study showed recently.

The study, conducted at the University of Wisconsin from 1949-59, was reported by Alfred S. Evans, M.D., and Jeffrey Warren, B.S., Madison, Wis., in the June *Archives of Environmental Health*, published by the American Medical Association.

Respiratory infections, not including flu, "far outnumbered" all other causes of illness recorded at the university's student clinic and infirmary, the authors said.

Respiratory ills, skin eruptions, psychiatric problems and gastrointestinal upsets were termed the "Big Four" among the 10 most common diagnoses in the young adult student population.

The availability and low cost of counseling and psychiatric services might be a factor in the relative frequency of emotional problems seen at the student health facilities, the authors said. Another factor is the greater likelihood of emotional problems emerging in university students than in those in a more stable working environment, they said.

The findings point up the need for psychiatrists and dermatologists, at least on a consultant basis, in university health departments, they said.

2 vascular insufficiency of the labyrinth is an important etiologic factor in sudden perceptive deafness... "vasodilators [Arlidin] are of considerable value."

Wilmot, T. J. and Seymour, J. C.: Lancet 1:1098, 1960.

4 early cases of sudden perceptive deafness should be treated by immediate stellate block "supplemented by the most effective vasodilator drug [Arlidin]... energetic measures to retain blood supply to the inner ear are imperative."

Wilmot, T. J.: J. Laryngology & Otology 73:466, 1959.

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Sheehy, J. L.: Laryngoscope 70:885, 1960.

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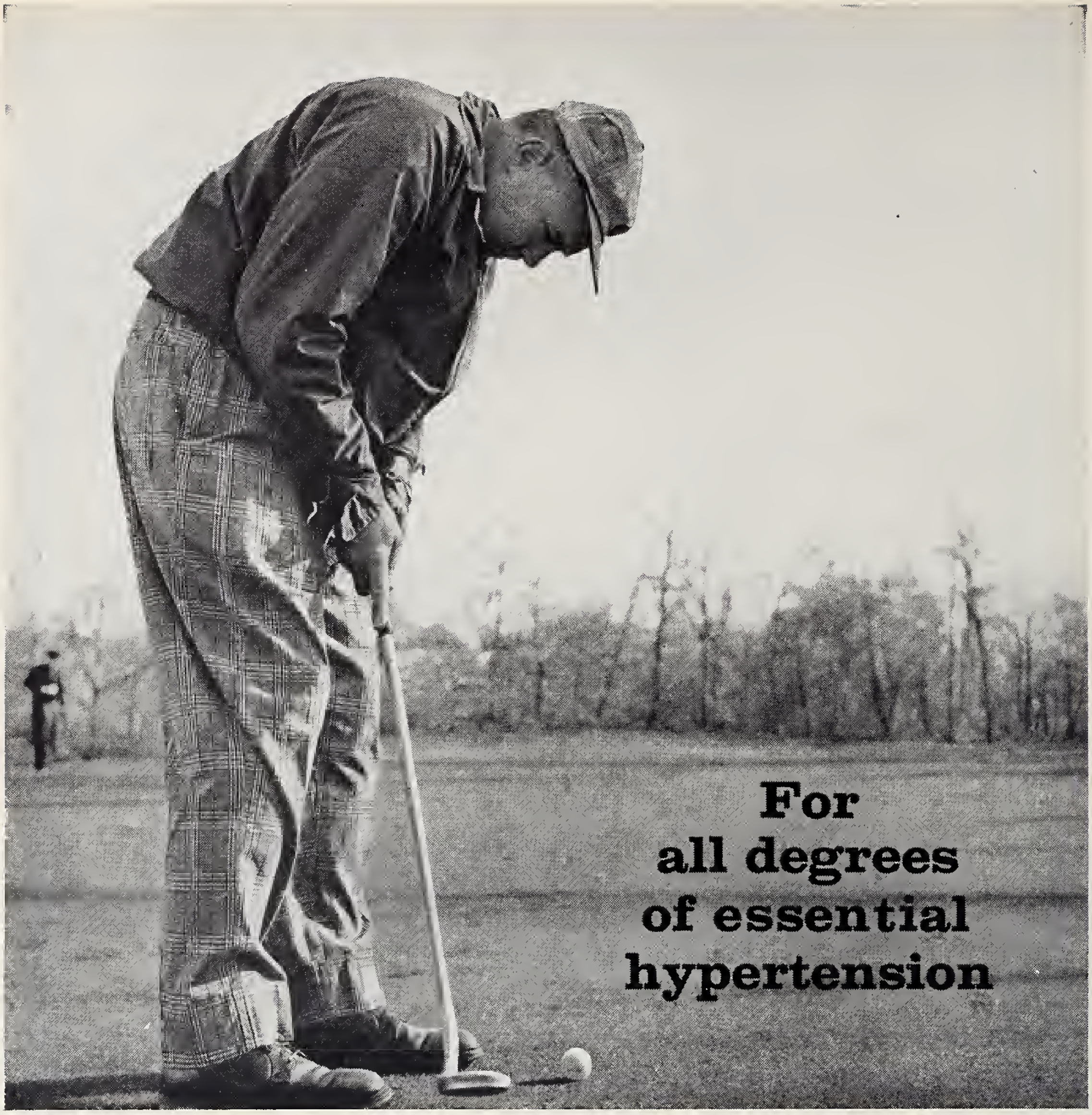

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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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References and Reviews

(Continued from Page 56)

are (a) complacency on the part of everyone, thinking that since World War II penicillin, has cured all syphilis, and (b) failure of hospitals, institutions, prisons, private practitioners, and clinicians to order a routne blood test on each patient or inmate. The one thing that completely defeats the control of syphilis is the failure of physicians, hospitals, institutions, all laboratories—both state and private—to notify immediately the proper public health officials each and every time they discover an early infectious case of syphilis, so that the infected person may be interviewed for sex contacts. It is only through applied epidemiology that any chain of a syphilitic infection can be broken.

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Temporary Care of Mentally Defective Children on a Pediatric Unit—S. Yudkin and J. B. Burke. Lancet—Vol. 1:633 (March 24) 1962.

A number of mentally defective children were admitted to a pediatric unit during the summer months for a fortnight each to relieve their families. Questionnaires showed that the parents of other children on the ward did not object. Low-grade defectives were less disturbed by the separation than higher-grade defectives. The problems encountered are discussed.

* * *

Clinical Significance of Prolapse of Gastric Mucosa—M. D. Custer, Jr., J. C. Hortenstine, and E. W. Lacy, Jr. Ann. Surg.—Vol. 155:681 (May) 1962.

The clinical significance of prolapse of gastric mucosa has been a matter of controversy since 1911. In recent years the literature has shown a definite trend toward acceptance of the lesion as an important cause of upper abdominal pain. This study reports the results in 10 patients operated upon for prolapse without other lesions. Excellent relief was obtained in 7, fair in 3. The authors express preference for gastric resection over pyloroplasty.

* * *

"Due Caution" and Radioiodine in Children—D. A. Fisher and T. C. Panos. Amer. J. Dis. Child.—Vol. 103:729 (June) 1962.

A review of available pertinent data regarding harmful genetic and somatic effects of radioiodine in children indicates that the limiting dosage factor of diagnostic radioiodine in children is the potential radiation damage to thyroid cells. Reliable radioiodine uptake studes are possible in children with 0.05 to 0.2 μc I^{131}/kg. of body weight. Available information suggests that the radiation risk with such doses is minimal.

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Facts About Nursing Needs in California

Here are some facts about nursing and nursing needs in California:

In 1950 California had a ratio of 353 registered professional nurses in active practice per 100,000 population; by 1957 this ratio had declined to 269.

The ratio of all nurses (active and inactive) in California in 1960 was estimated to be 450 per 100,000 population. The ratio varied from 209 per 100,000 population in the Imperial Valley area to 598 in the San Francisco-Oakland area. Of nurses residing in California (estimate is about 70,670) only about 60 per cent are in active practice.

California now prepares only about 25 per cent of the nurses it uses. The remainder come from other states and other countries.

In September 1961 there were 57 accredited schools of nursing which prepared nurses for licensing as registered nurses. Of these 16 offered baccalaureate programs, 20 offered associate degree programs, and 21 offered diploma programs, of which two now are admitting no additional students.

In 1960, 1,288 students were graduated from basic nursing programs. Of these 280 were from baccalaureate degree programs, 234 were associate degree programs and 774 were from diploma programs.

To meet nursing needs in California in the future, it is estimated that about 9,500 new registered nurses will be needed each year. Assuming that California will continue to attract approximately 4,400 nurses each year from other states and other countries, it is estimated that California schools of nursing will need to graduate about 5,100 students per year. This is more than four times the number now being graduated.

There are now 47 accredited schools of vocational nursing in California. In 1961 these schools graduated 1,600 students.

Need for Nurses In California

These factors are bringing about the need for additional nursing services:

1. The rapidly increasing population in California (from 16,000,000 in 1962 to an estimated 25,000,000 plus in 1975).

2. The increase in the number of people using hospitals and the frequency of such use.

3. The need for additional hospital beds to meet increased demands.

4. The shift from long-term to short-term hospital stay for patients with acute illnesses.

5. Wider health coverage for all age groups.

6. Changes of patterns of care in hospitals (progressive care, team nursing, etc.)

7. New practices in the care of the mentally ill (day-night services, mental health clinics, group therapy, psychiatric wards in general hospitals).

8. Needs of the chronically ill, and the rapidly increasing population over 65 years of age.

9. Development of home care programs and nursing homes.

10. Rising birth rate resulting in an increase in maternal and child care activities.

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Gynecology, Office & Operative	Two Weeks, Sept. 17
Obstetrics, General & Surgical	Two Weeks, Oct. 8
Urology	Two Weeks, Oct. 29
Proctoscopy & Sigmoidoscopy	One Week, Sept. 10
General Practice Review	One Week, Oct. 8
Gallbladder Surgery	3 Days, Oct. 8
Surgery of Hernia	3 Days, Oct. 11
Basic Electrocardiography	One Week, Oct. 1
Board Review, Internal Medicine—Part I	Sept. 10
Advances in Medicine	One Week, Oct. 15
Advances in Surgery	One Week, Dec. 10
Blood Vessel Surgery	One Week, Oct. 22
Board of Surgery Review, Part I	Two Weeks, Nov. 5
Board of Surgery Review, Part II	Two Weeks, Nov. 26
Fractures & Traumatic Surgery	Two Weeks, Oct. 1

Information concerning numerous other continuation courses available upon request.

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Heart Rate During Sleep Studied By FM System

An FM radio system has enabled researchers to study heart rate patterns of patients during a night of undisturbed, uninterrupted sleep, it was reported in the June 16 *Journal of the American Medical Association.*

The success of the study indicates that the technique, known as radiotelemetry, will make it possible to gather information on bodily functions which were previously difficult to observe, Drs. Gordon H. Ira Jr. and Morton D. Bogdonoff, Durham, N. C., said.

"Though the situation of uninterrupted sleep does not present many technical difficulties, the fact that the observations were made without in any way disturbing the subject suggests that the method will have wide application," they said.

The study revealed that the heart rate of a sleeper decreases gradually during the course of the night and eventually reaches a low point after which it may increase gradually, the researchers reported.

However, they said, the heart rate of persons with hyperthryroidism did not decline during sleep. Pulse rates in these persons ranged from 108 to 118 beats per minute, which were not appreciably lower than their pulse rates while awake, they said.

The study also revealed that there were some periods of increased heart rate during the night which were associated with body movements.

"Simultaneously recorded electroencephalograms [records of brain activity] demonstrated that the depth of sleep lightened at the time that body movement and heart rate increases occurred," they said. "The plane of sleep, therefore, is fairly consistently reflected by the contour of the heart-rate pattern: when there is variability in heart rate, the plane of sleep is light; when there is constancy in heart rate level, the plane of sleep is deep."

Prolonged and uninterrupted recordings of this type have been difficult to obtain because of limits imposed by recording equipment, the two physicians said. Advances in electronic miniaturization have led to the development of transistorized radio instruments which make it possible to signal information without bulky recording equipment, they said.

A transmitter, the size of a package of cigarettes, is used in the new technique, the authors explained. The patient's heart beat is picked up by leads attached to his chest which are connected to the transmitter worn in a wide belt, they said.

The transmitter, operating on a frequency allocated by the Federal Communications Commission, broadcasts an FM signal which is received on a standard FM radio, they said. From the receiver, the signal is fed into a tape recorder and then to other machines for analyzing the data, they said.

The authors are affiliated with the department of medicine Duke University Medical Center.

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Raddin, J.: Med. Times, July 1961

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Hoolnick, H. J.: J. Am. Ger. Soc., 4:1021-1030, 1956

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Marshall, W.: S. D. J. Med. & Pharm., 8:151-153, 1955

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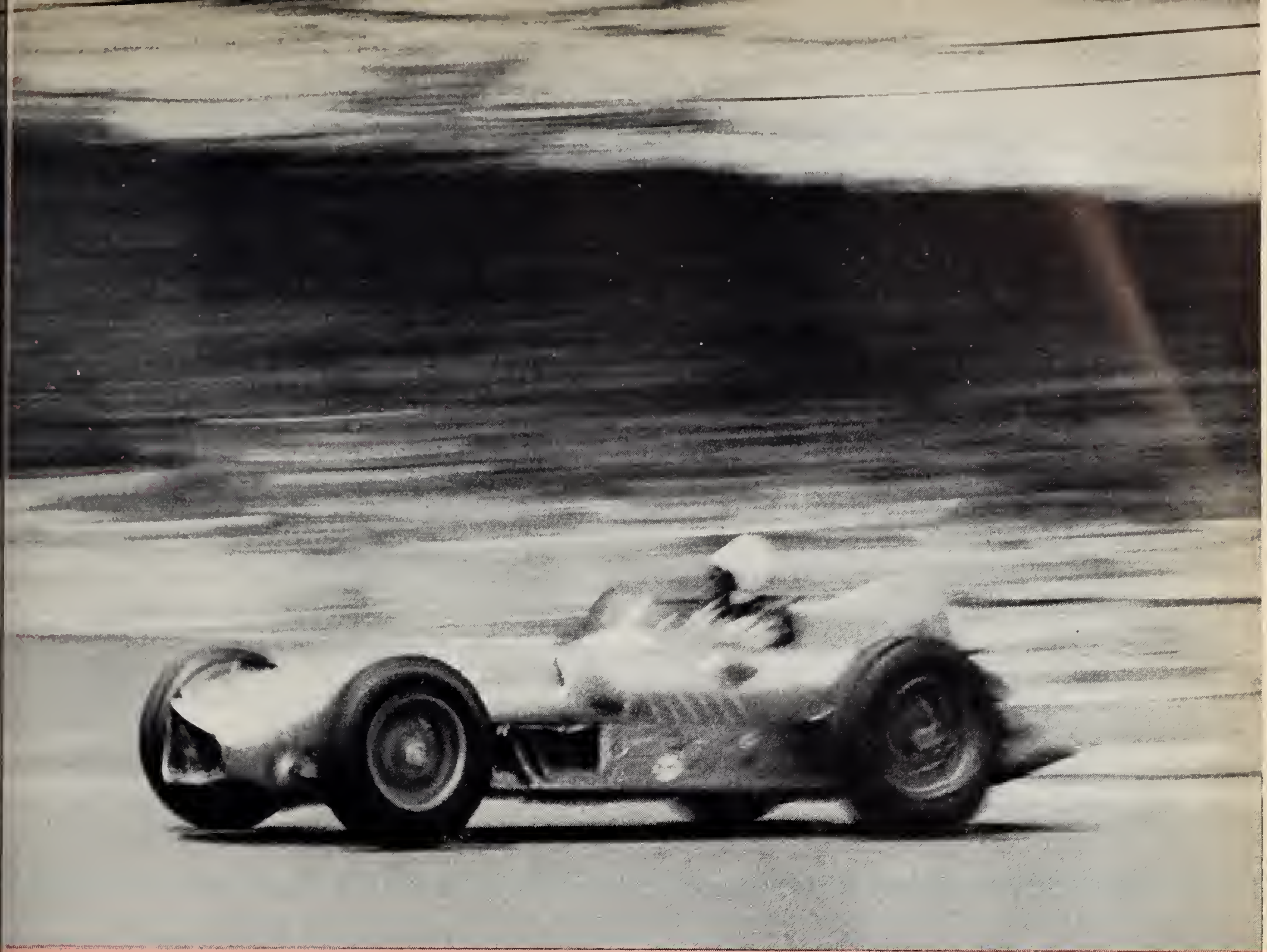
rag'weed' (-wēd'), *n.* **a** *Eng.* The ragwort. **b** *U. S.* Any of several coarse herbs (genus *Ambrosia*) typifying a family (Ambrosiaceae, the ragweed family) having heads of flowers subtended by an involucre of bracts; esp. a very common weed (*A. elatior*) with deeply lobed or dissected leaves; and the **great,** or **giant, ragweed** (*A. trifida*), with trilobate leaves. The cockleburs (see COCKLEBUR) also belong to this family.

rag'wort (-wûrt'), *n.* Any of several plants (genus *Senecio*) of the aster family, as the **golden ragwort** (*S. aureus*) of the United States, having an open corymb of yellow-rayed flowers.

ra'yah (rä'yȧ), *n.* [F., fr. Turk. *ra'aya*, fr. Ar. *ra'iyah*, flock, herd.] A non-Moslem subject of the Ottoman Empire.

road. See ROAD raid, way.]



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REFERENCES AND REVIEWS

Keloids and Barbiturate Coma—S. Blau, N. B. Kanof, and H. B. Eiber, Arch. Derm.—Vol. 85:747 (June) 1962.

A strange formation of keloids is described in three young women. These lesions followed the healing of traumatic skin erosions produced during the agitated phase of suicidal barbiturate coma.

* * *

Management of Fatigue: Physiological Approach—D. L. Shaw, M. A. Chesney, I. F. Tullis and H. P. K. Agersborg, Amer. J. Med. Sci.—Vol. 243:758 (June) 1962.

The potassium and magnesium salts of aspartic acid (aspartates) were administered to relieve chronic fatigue, with and without associated somatic disease, in a blind study of 163 subjects; normal and placebo controls and a double blind cross-over trial were included. The subjective response was positive in 86 per cent after active therapy, and 25 per cent after placebo. The over-all correlation between the subjective response and the findings in objective measurement of neuromuscular irritability was 88 per cent.

* * *

Tuberculosis in Man, Dog, and Cat—V. M. Hawthorne and I. M. Lauder, Amer. Rev. Resp. Dis.—Vol. 85:858 (June) 1962.

Growths of *Mycobacterium tuberculosis* of human origin were recovered, probably as commensals, from 8 of 70 apparently healthy dogs and cats in contact with human tuberculosis. Tuberculosis was found in 41 of 354 humans in contact with 31 dogs dying of tuberculosis. This indicates the same need to notify the Public Health Department of a tuberculous animal as of a tuberculous human. The use of BCG as a diagnostic test for tuberculosis in dogs and cats was described and compared that of with purified protein derivative (PPD), which was ineffective.

* * *

Calcium Balance Made Easy—W. P. U. Jackson—Lancet—Vol. 1:849 (April 21) 1962.

This review article considers the calcium balance in different circumstances, normal and pathological. The report is illustrated by several simple diagrams; it also summarizes the author's hypothesis of intestinal compensation for loss of calcium in the urine.

* * *

Nonsuture Repair of Blood Vessels—J. E. Healey, Jr., R. L. Clark, H. S. Gallager, P. O'Neill, and K. S. Sheena, Ann. Surg.—Vol. 155:817 (June) 1962.

A technique for nonsuture linear and circumferential repair of blood vessels utilizing a plastic adhesive (Eastman 910) is described. A clamp (anastomat) specially designed for rapid restoration of blood flow during circumferential repairs is described in detail. The results of 170 vascular repairs performed on animals are discussed. Only two fatalities occurred as a result of hemorrhage at the repair site. The advantages, precautions in application, and disadvantages of the method are presented.

* * *

Retinal Detachment and Glaucoma I—J. G. Sebestyen, C. L. Schepens, and M. L. Rosenthal, Arch. Ophthal.—Vol. 67:736 (June) 1962.

Retinal detachment was treated in 160 patients by scleral buckling procedure, using a circling polyethylene tube in

(Continued on Page 30)

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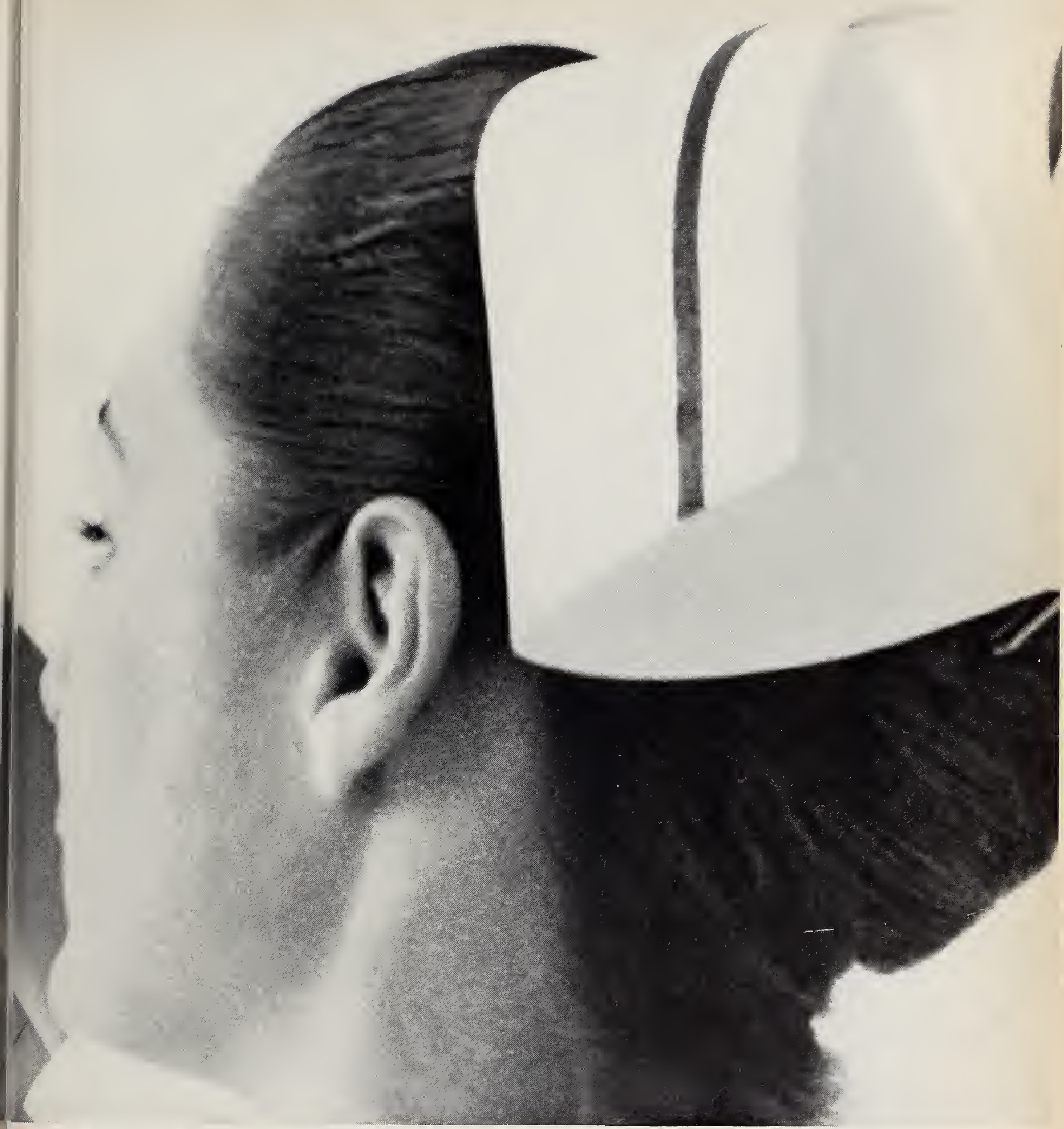

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REFERENCES AND REVIEWS

(Continued from Page 24)

most cases. Pre- and postoperative gonioscopic and tonometric findings were described, and factors which influenced postoperative elevation of ocular pressure were discussed. The findings failed to show that glaucoma occurred in an alarming number of instances as a result of the scleral buckling operation with circling polyethylene tube.

* * *

Aminopeptidase in Elastotic Skin—J. Hasegawa, Arch. Derm.—Vol. 85:720 (June) 1962.

Histochemical study of 10 punch biopsy specimens of elastosis of skin showed localization of an aminopeptidase in the areas of elastosis. Adsorption of the aminopeptidase from the adjacent cellular structures could not be demonstrated.

* * *

Marginal Keratitis Following Muscle Surgery—J. S. Nauheim, Arch. Ophthal.—Vol. 67:708 (June) 1962.

Ten cases of keratitis and corneal ulceration adjacent to the site of previous eye muscle surgery were observed. Lesions occurring between 5 and 19 days postoperatively were healed within 3 to 28 days. Local antibiotics to prevent secondary infection were advocated. Embarrassment of local corneal circulation due to section of anterior ciliary vessels and prolonged local conjunctival edema were postulated as cause.

* * *

Mortality Causes in General Surgery: A 30-Year Study—C. B. Morton, II—Ann. Surg.—Vol. 155:991 (June) 1962.

During 30 years, 1928-1957 inclusive, 9,364 patients underwent 9,734 major surgical operations performed by a single surgeon in an ordinary general surgical practice. There were 195 deaths, a patient mortality rate of 2.29 per cent, an operation mortality rate of 1.75 per cent. Several tabulations indicating the mortality by years, and classified the deaths by regions, by operations, and by the pathologic processes responsible for death.

* * *

Giant Pericardial Cyst—C. A. Ross and A. G. Ramos, Amer. Rev. Resp. Dis.—Vol. 85:895 (June) 1962.

An unusual pericardial cyst sufficiently large to produce dyspnea by compression of normal lung is described. The cyst arose in the mediastinum and extended to both the left and right hemithorax. It contained 3 liters of clear fluid. Total excision by bilateral anterior thoracotomy gave complete relief of symptoms.

* * *

Direct-Access Diagnostic Facilities in General Practice—T. S. Eimerl, Lancet—Vol. 1:851 (April 21) 1962.

The results of a survey of figures provided by the Ministry of Health for 1958 and 1960 are presented. It is shown that with 21,000 family doctors freely available to 45 million people only 6 per cent of all patients referred for routine pathology are sent via G.P.'s, only 9 per cent of all radiology is performed at the request of G.P.'s. In teaching hospitals only 1 in 50 of all investigators in pathology and only 1 in 80 of all investigators in radiology are requested by family doctors. Lessons drawn from this imbalance suggest that 13 years after the inception of the National Health Service, family doctors do not have all the facilities of direct-access diagnostic investigation essential to good family doctoring. Suggestions are offered regarding the functional design and the purpose of a hospital which offers a full range of care. A comparison is drawn between medical practice in the United Kingdom and medical practice in Holland and in the Scandinavian countries.

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California
MEDICINE
OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION
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Volume 97 AUGUST 1962 Number 2

Correctable Cardiac Failure

ARTHUR SELZER, *M.D.*, and FRANK GERBODE, *M.D.*, San Francisco

• The concept of reversible cardiac failure has hitherto been applicable mostly to rare instances of acute afflictions of the myocardium wherein cardiac compensation returns with the healing of the process. Recent strides in cardiac surgery have brought into focus a wide variety of conditions where operative removal of the cause of heart failure can successfully restore compensation.

The concept of increased work of the heart—cardiac overload—is presented and classified with special reference to those forms where surgical removal of the cause of the overload is possible.

Now, since surgical treatment of a patient in functional class IV need no longer entail risk of prohibitive mortality, a careful search is indicated in patients in a state of chronic cardiac failure, particularly in the younger age group, for a correctable factor or factors.

IN SPITE OF DRAMATIC ADVANCES in the treatment of hypertensive diseases, the term "curable" hypertension can only be applied to the relatively small group of cases in which the cause of hypertension can be removed surgically, such as coarctation of the aorta, pressor-substance producing tumors, or correctable renal and renal-vascular disorders. Other forms of hypertension can at best be controlled by continuous therapy. An analogous situation has been created by recent surgical strides in the treatment of chronic cardiac failure, for in a growing number of conditions the cause of failure can be removed surgically, reversing otherwise intractable heart failure.

There are few concepts in clinical medicine that match cardiac failure with regard to the controversy and confusion surrounding its clinical, physiological and metabolic definition. The introduction of modern, precise physiological methods into clinical medicine helped to clarify many points but at the same time brought into focus other unanswered questions. However, two concepts can be considered as generally accepted: (a) the two ventricles can fail and recover from failure independently of each other; (b) heart failure is usually caused by increased work—"overload" of a cardiac ventricle.

The work of the heart is expressed in physiological terms as a product of the quantity of blood ejected into the arterial system and the pressure against which it is expelled. It follows that overloading of a ventricle can occur when the output is excessive or the pressure elevated. Physiological increase in cardiac work occurs during exercise, when cardiac output rises; during stress and excitement when pressure is increased. Pathological cardiac overwork occurs when pressure overload or volume overload occurs continuously rather than intermittently. Such pathological overload stimulates a compensatory increase in muscle mass—cardiac hypertrophy—which can, for variable lengths of time, maintain an adequate circulation in spite of its overloading. Eventually the hypertrophied ventricle becomes inefficient and the symptom complex

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From the Institute of Medical Sciences, Presbyterian Medical Center, San Francisco 15.

Presented at the Eighth Annual Symposium on Cardiovascular Diseases of the Monterey County Heart Association, Fort Ord, January 20, 1962.

Submitted March 5, 1962.

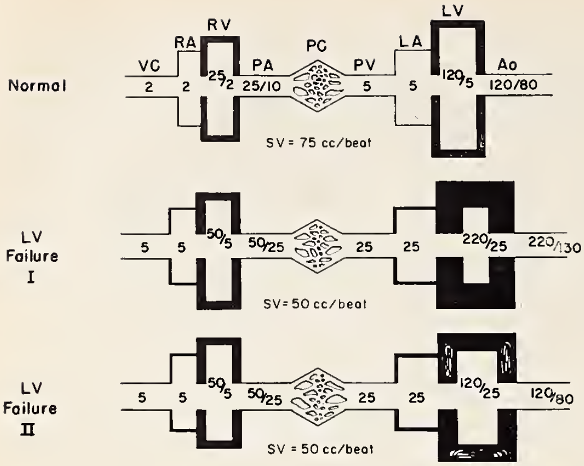

Figure 1.—Diagrams of the circulation: top, normal; middle, left ventricular failure due to hypertensive overload; bottom, that due to myocardial scars. The top drawing presents a diagram of a normal circulatory system by indicating pressures in the various regions and a normal stroke volume of 75 cc. per beat. The middle drawing presents left ventricular failure due to absolute systolic overload of chronic hypertension. Left ventricular hypertrophy is shown and failure of that ventricle indicated by an elevation of the diastolic pressure to 25 mm. and by reduced stroke volume to 50 cc. per beat. Left ventricular diastolic hypertension leads to elevation of left atrial pressure and passive pulmonary hypertension. However, the right ventricle, though overloaded, is still competent. The bottom drawing presents left ventricular failure due to relative left ventricular overload from chronic scarring of that ventricle after myocardial infarction. Left ventricular hypertrophy is also present here and its hemodynamic sequelae are identical with those shown above.

of chronic cardiac failure develops. A variety of cardiac diseases exemplify conditions associated with chronic ventricular overload. Hypertension and valvular stenosis produce pressure overload; volume overload is brought about by valvular regurgitation, shunting lesions and hypercirculatory states. Pressure overload, often referred to as *systolic* overload, causes concentric ventricular hypertrophy unassociated with dilatation until later, during the stage of decompensation. Volume overload, as *diastolic* overload, leads to early development of cardiac dilatation (eccentric ventricular hypertrophy).

The concept of chronic overloading of the circulation is applicable to many but not all forms of cardiac failure. The most important form of chronic cardiac failure in which the work of the heart appears not to be increased is that occurring in the late stage of ischemic heart disease ("arteriosclerotic heart disease"). Yet in such cases chronic failure is likely to occur only if a significant portion of the left ventricular myocardium is replaced by functionally inactive scar tissue. It follows that the normal cardiac work has to be performed by a considerably reduced number of muscle fibers and that therefore the work *per muscle fiber* is increased. One is thus justified in accepting this condition as a variant of the chronic overload and in using the term "relative cardiac overload."

A comparison of "absolute" and "relative" overloading of the left ventricle is presented in diagrammatic form in Figure 1.

There are, however, conditions in which the concept of overloading of a cardiac ventricle as a cause of cardiac failure does not seem to be applicable. Among them are the various inflammatory, degenerative or toxic conditions affecting cardiac performance, in which all or most muscle fibers are uniformly affected. Many of these afflictions are acute and constitute truly reversible cardiac failure: the circulatory derangement returns to normal with the healing of the myocardial lesion.

When can chronic cardiac failure be considered reversible? The mere disappearance of clinical manifestations of heart failure does not provide evidence of reversibility. Studies in our laboratory[1] have demonstrated that patients with various forms of cardiac failure may become totally asymptomatic in response to therapy and yet almost always show abnormal hemodynamic findings, demonstrating that they are merely in a state of *controlled* heart failure. The only real examples of reversibility of chronic cardiac failure are those in which chronic overload responsible for failure can be totally or partially eliminated. It is obvious that only absolute cardiac overload can be eliminated: relative overload, as stated above, is caused by reduction of the number of contracting myocardial units and is not correctable.

A simple example of the elimination of cardiac overload is the treatment of hyperthyroidism or anemia. Both of these conditions lead to a hypercirculatory state but seldom of themselves lead to chronic cardiac failure, acting mostly as a contributory factor in combined cardiac lesions. Therefore, it is quite rare to find spectacular elimination of chronic heart failure by the correction of these states. It is by surgical elimination of overload that dramatic elimination of advanced heart failure and a complete rehabilitation of a chronic "cardiac cripple" can be brought about. The following is a brief discussion of the more important forms of surgically correctable cardiac overload.

Left ventricular failure

Systolic overload of the left ventricle. This is responsible for heart failure after prolonged systolic left ventricular hypertension, which in turn may be caused by either *arterial hypertension* or by *aortic stenosis*. Chronic cardiac failure from arterial hypertension is seldom reversible unless a surgically curable form of hypertension exists. The fact that medical treatment of hypertension usually does not

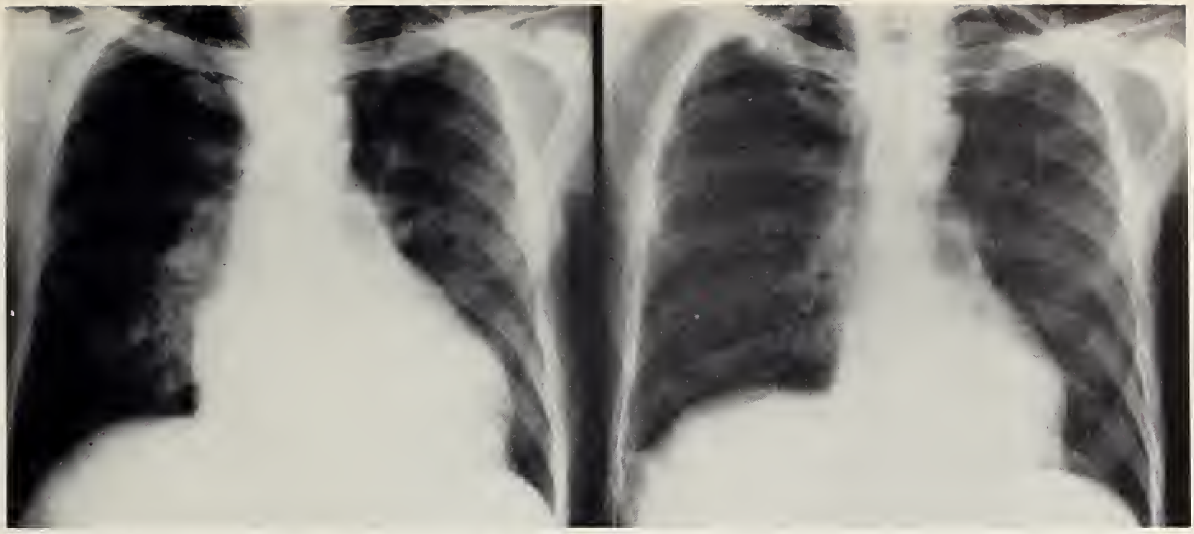

Figure 2.—Anteroposterior roentgenogram of a patient with severe mitral regurgitation: left, before; right, after mitral valvular repair.

reverse cardiac failure resulting from it is probably related to the widespread vascular deterioration which is usually present by the time chronic cardiac failure has developed.

On the other hand, aortic stenosis may lead to intractable cardiac failure which is quickly and dramatically reversed if the obstruction can be entirely relieved, therefore restoring normal left ventricular systolic pressure.

Diastolic overload of the left ventricle. The two common conditions with increased cardiac work of this type are *patent ductus arteriosus* and *aortic regurgitation.* In both, the left ventricle ejects an excessive amount of blood. In both, hypertrophy associated with early dilatation of that chamber occurs. Left ventricular overload of this type is relatively well tolerated, and it is not unusual to find an extreme degree of cardiomegaly with little or no disability. Cardiac failure occurs late but is often then unrelenting, and refractory to therapy, unless surgical treatment can eliminate the overload altogether. The dramatic reversal of cardiac failure and reduction in cardiac size in cases of this category in which surgical treatment was successful are among the most spectacular results in the field of cardiac surgery.

Combined ventricular failure

Left ventricular failure from any cause produces passive pulmonary hypertension, as shown in Figure 1, which leads to systolic overload of the right ventricle. This is occasionally exaggerated by the occurrence of pulmonary arteriolar spasm or pulmonary vascular disease developing secondarily to passive pulmonary hypertension. Thus it is well known that left ventricular failure is the commonest cause of right ventricular failure which eventually results from right sided overload. However, two conditions are known to cause initial overload of both ventricles: *mitral regurgitation* and *ventricular septal defect.* Mitral regurgitation produces diastolic overload of the left ventricle by necessitating the ejection of large quantities of blood into the atrium in addition to that into the aorta.

Recent studies have shown that as much as 75 per cent of the total output may be regurgitated into the atrium. However, in contrast to aortic regurgitation and patent ductus, mitral regurgitation causes left atrial hypertension. Consequently the resulting right ventricular overload occurs *before* the onset of left ventricular failure. Ventricular septal defect associated with a sizable left-to-right shunt leads to increased output of both ventricles, causing diastolic overloading of both sides. In both ventricular septal defect and mitral regurgitation, left ventricular overload and failure usually predominate, but pulmonary hypertension may progress to a point where right ventricular hypertrophy and failure come into the foreground. Surgical therapy may completely eliminate the overload and reverse cardiac hypertrophy and failure. Figure 2 illustrates the regression of cardiomegaly in a patient who before surgical treatment was totally disabled by combined right and left heart failure due to mitral regurgitation and who became virtually asymptomatic after successful repair of the valve lesion.

Right ventricular failure

Right ventricular failure is the result of right ventricular overload under conditions analogous to events in the left heart referred to above. However, only absolute right ventricular overload is of importance. since involvement of the right ventricular myocardium leading to its relative overload is not known to be of major importance. Again, two forms of right sided overload can occur: pressure and volume.

Systolic overload of the right ventricle. Increased work of the right ventricle here is caused by elevated systolic pressure in it, which may be due to abnormally high resistance at the pulmonary valve or beyond it; pulmonary stenosis and pulmonary hypertension. *Pulmonary stenosis* is usually well tolerated when mild or moderate in severity. Severe pulmonary stenosis may lead to intractable right ventricular failure, which is occasionally complicated by the opening of the incompletely sealed foramen ovale, resulting in significant anoxemia or even gross cyanosis. Both failure and anoxemia are reversible by surgical treatment. *Pulmonary hypertension* occurs in a variety of conditions and has many causes. In general, pulmonary hypertension falls into three categories: increased resistance within the pulmonary vascular tree, increased resistance beyond the pulmonary venous system ("passive pulmonary hypertension"), and the combination of both. The first type is, as a rule, irreversible. The other two may or may not be reversible; passive pulmonary hypertension may be caused by left ventricular failure or by mitral valve disease. The former has already been discussed: its reversibility depends on whether or not the left sided lesion is correctable. *Mitral stenosis* is the commonest and the best known cause of reversible passive pulmonary hypertension. It should be noted, however, that uncomplicated mitral stenosis, even severe. seldom causes severe enough pulmonary hypertension to lead to chronic right ventricular failure, which if present is almost always due to the development of secondary pulmonary vascular reactions. Thus, in some 15 per cent of cases of mitral stenosis, pulmonary hypertension of a combined type develops, which is then apt to cause chronic right ventricular failure. Two points are noteworthy in connection with mitral stenosis: pulmonary hypertension complicating mitral stenosis may become severe enough to dominate the clinical picture and obliterate the clinical landmarks identifying mitral stenosis. Serious errors have been made on occasion by mistaking such cases of mitral stenosis for irreversible primary pulmonary hypertension. Furthermore, surgical correction of mitral stenosis abolishes not only passive pulmonary hypertension but leads to gradual regression of pulmonary vascular disease, thus further accentuating beneficial effects of the operation.[2]

Diastolic overload of the right ventricle is exemplified by the *atrial septal defect.* In the presence of an interatrial communication the lower resistance to diastolic filling of the right ventricle causes large left-to-right shunt with the volume load of the right ventricle as high as four times that of the left. Curiously, severe volume overload of the right ventricle is very well tolerated and cardiac failure from an uncomplicated atrial septal defect is virtually unknown in children and adolescents. In adults, however, the chronic increase in pulmonary blood flow often leads to secondary pulmonary vascular disease and pulmonary hypertension. When that happens, chronic right ventricular failure may develop. It should be emphasized that unlike mitral stenosis. pulmonary hypertension in atrial septal defect has a point of no return, beyond which surgical treatment is ineffective and may even be harmful. Thus there is good justification for the performance of surgical repair of atrial septal defect in asymptomatic patients, provided facilities are available for the performance of such operations with a minimum mortality.

As stated, the foregoing discussion dealt only with the more common forms of cardiac overload leading to chronic cardiac failure. There are many other rarer forms of heart disease, some of which are reversible by surgical treatment, some not. It is particularly noteworthy that cardiac lesions frequently occur in combinations. Both congenital heart disease and rheumatic heart disease, the two principal etiologic causes of correctable cardiac lesions, show a tendency to affect more than one area of the heart. The hemodynamic consequences of combined lesions are usually additive and physiological studies often can unravel the respective contribution of the component lesions to cardiac disability. It is of considerable importance to distinguish between the principal overloading lesion and the lesser contributory factors, for to attempt surgical repair of all the anatomical defects might seriously and unnecessarily increase the risk. It is necessary to appreciate the fact that, if chronic cardiac failure develops because the heart is overloaded by 150 per cent over its normal work, a complete reversal of failure may result by the reduction of the overload to 25 or 50 per cent. A partial correction, wherein one lesion is repaired and another left untreated, is indicated when the total repair seriously magnifies the surgical hazard. Such situations develop frequently in the treatment of combined mitral and aortic lesions where the mitral disease predominates, or in atrial septal defects complicated by one or two transposed pulmonary veins, to name two examples.

Among unusual problems associated with surgical treatment of cardiac failure, two deserve comment. The first, constrictive pericarditis, does not cause heart failure in the ordinary sense, but rather congestive phenomena masquerading as heart

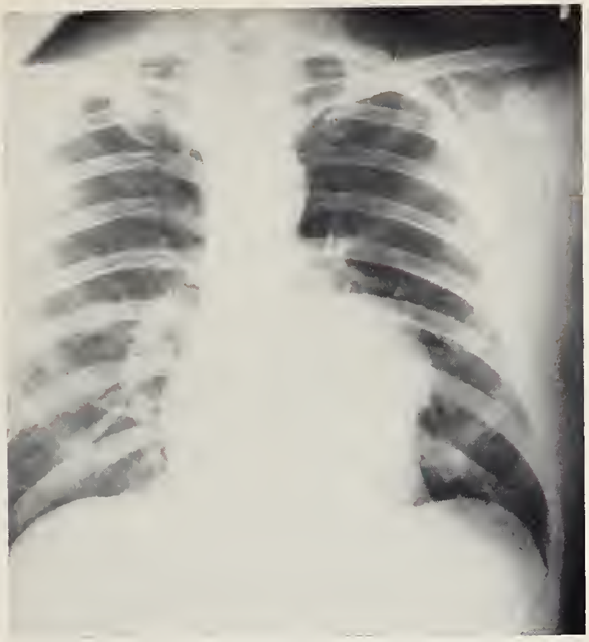

Figure 3.—Anteroposterior roentgenogram of a patient with a large aneurysm of the left ventricle.

failure. Surgical treatment of constrictive pericarditis, the oldest operation in the field of cardiac surgery, is probably performed less often than it ought to be because less typical forms of it may be overlooked. The classical picture of congestive "failure" with a small and quiet heart is not always present, and the differentiation between constrictive pericarditis and conventional forms of cardiac failure may be very difficult. The second problem concerns ventricular aneurysms. As the resection of aneurysms of the heart becomes technically possible and relatively safe, it is often tempting to consider the mere presence of such aneurysms as indication for operation. Figure 3 is a roentgenogram, taken in 1945, showing a large aneurysm of the left ventricle. The patient now is well and virtually asymptomatic. Unlike aneurysms of the great vessels, healed aneurysms virtually never rupture. Physiologically they resemble mitral regurgitation in that during systole the left ventricle has to eject blood into the aorta and also fill the aneurysmal sac, which overloads that cardiac chamber. As in mitral regurgitation, such left ventricular overload may be small, causing no major circulatory derangement, or large, leading to heart failure. Thus if chronic failure is present in a case of ventricular aneurysm and if the systolic expansion of the aneurysm indicates loss of large volume of blood, surgical treatment is indicated and often leads to spectacular improvement.

What is the role of the practicing physician in relation to the problem of surgical treatment of cardiac failure? Using again the example of hypertension, it is now generally recognized that every case of severe hypertension, particularly in a younger person, should be investigated with regard to the possibility of a curable form of hypertension. A similar attitude is justified in dealing with chronic cardiac failure. Only a high index of suspicion regarding reversibility of chronic cardiac failure will bring a satisfactory yield of surgically correctable cases. It might seem, superficially, that such cases are easy enough to recognize that they should present no diagnostic problem. While this is true for a typical case of mitral stenosis, aortic stenosis or patent ductus arteriosus, there are many instances in which the correct diagnosis is exceedingly difficult to make and may require the most complex laboratory procedures. It is well to remember that the very presence of cardiac failure or of the complications that enhance failure, such as pulmonary hypertension, brings into the picture atypical and confusing clinical features. It has already been mentioned that pulmonary hypertension complicating mitral stenosis often suggests the erroneous diagnosis of primary pulmonary hypertension. Pulmonary hypertension tends to obliterate the characteristic murmurs of patent ductus arteriosus and ventricular septal defect. Cardiac failure may reduce the murmur of aortic stenosis to a seemingly inconsequential systolic murmur. Severe cardiac failure may lower the wide pulse pressure of aortic regurgitation to a point where it is no longer suspected as being the principal cause of the cardiac overload. Apical systolic murmurs are exceedingly common in any form of left ventricular failure and occasionally it is difficult to decide whether mitral insufficiency is the cause or the effect of cardiac failure.

In selecting patients with cardiac failure for surgical treatment, it is essential that a comprehensive diagnostic evaluation be made. This includes not only an analysis of the hemodynamic factors leading to cardiac overload but a search for such complicating factors as coronary artery disease, which, if demonstrated in the coronary angiogram, would make an operation inadvisable. The risk of operating upon properly selected patients in chronic failure is higher than average, but not prohibitive in the hands of a team with proper experience and facilities to handle such cases.

Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15 (Selzer).

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Ammoniacal Dermatitis

Clinical Observations on an Efficacious, Economical and Neglected Treatment

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• Several pediatricians in one community began instructing mothers of infants with ammoniacal diaper rash to use o-benzyl-p-chlorophenol (OBPC) in laundering diapers. This simple, previously reported item of management was prescribed in 87 cases of ammoniacal rash. In almost all uncomplicated cases the rash cleared in an average of four days; when complicated by Staphylococcus aureus or Monilia albicans infection, clearing took a few days longer. The few cases of less than satisfactory results were attributable to improper use of the chemical.

Several of the mothers had mild irritation of the hands from use of OBPC.

In spite of observations and detailed studies extending for more than fifty years, ammoniacal diaper rash remains one of the most common skin disorders encountered in pediatric practice. Although mild cases respond to the usual simple measures, some become quite severe, with ulceration and secondary bacterial and fungal infection which may be resistant to extremely energetic therapeutic measures. It is the purpose of this paper to call attention to a simple and effective method of management first described by Stephens and coworkers[9] in 1952, and to outline the experience of a group of pediatricians with it.

The characteristic erythematous, vesicular, papular and ulcerated forms of the skin lesions occurring in the diaper area in association with ammonia in the diaper have been well described by Jacquet,[4] Adamson,[1] Brenneman[2] and Cooke.[3] The observation by Cooke in 1929 that the primary cause of the skin lesions was ammonia that was formed in the diaper by the growth and activity of the organism Bacterium ammoniagenes led to a rational therapeutic approach. Cooke found this organism primarily present in the feces and infrequently in the urine of the affected infants. An alkaline medium is favorable to growth of this bacterium and the organisms have been observed to grow readily in a diaper that has remained in contact with the skin for several hours after urination.

Many products have been used to sterilize diapers in order to break the bacterial metabolic chain and thus to prevent formation of ammonia. Most of them have been found to be deficient in one way or another. Mercury compounds were effective but were abandoned because of their decided toxicity. Boracic acid was found to be potentially harmful and was considerably less effective. More recently, the quartinary ammonia compounds have been used. These compounds, although nontoxic and frequently effective under ideal conditions, have certain physical and chemical limitations. Even small residual amounts of soap, detergent, organic materials, or certain ingredients of hard waters such as calcium and magnesium ions left in the diaper will rapidly diminish the effectiveness of these compounds. It has been demonstrated that a hardness of 150 parts of these ingredients per million in the water used in laundering diapers will reduce bactericidal activity by about 70 per cent.[1] Many geographical areas in California have metropolitan water of approximately 170 parts per million, while well water in some places has a content of 300 parts per million.

Recently it was observed at a hospital in Orange County that none of the babies on the pediatric service had ammonia diaper rash, and there was no odor of ammonia in the diaper pail. It was further noted that a residual rinse containing o-benzyl-p-chlorophenol (OBPC) was used in laundering the diapers. Stephens,[9] in 1952, published an excellent article on this use of the chemical, but for some reason, although it is widely used by commercial laundries and diaper services, it has never been made available for use in individual home laundries. A supply of OBPC was obtained and use of it in the laundering of diapers was recommended by a group of pediatricians, the material having been found to sterilize diapers and, when impregnated into the diapers in a final rinse, to leach out in urine to form a bactericidal solution effective against Staphylococcus aureus, Monilia albicans and Bacterium ammoniagenes. The effectiveness of OBPC is not decreased by the use of hard water, which may even enhance its action, or by soaps or other residues.[5]

Submitted March 5, 1962.

TABLE 1.—*Results of Laundering Diapers with Solution of OBPC in Cases of Ammoniacal Diaper Rash*

Cause of Lesions	No. Cases	Results		
		Good	Fair	Poor
Ammonia	71	67	2*	2*
Ammonia with secondary Monilia (proven by culture)	9	7	1 (7 days)	1 (2 weeks)
Ammonia with secondary Staphylococcus (proven by culture)	7	6	1 (10 days)	0
	87			

*OBPC was not used properly.

PRESENT STUDY

Our investigations were mainly in children with severe ammoniacal dermatitis that had not responded to the usual method of management. The rashes were frequently complicated by ulcerative lesions or by superimposed infection (confirmed by culture). The mothers of children were instructed to use OBPC* in such a way that the final rinse for diapers was a solution of 1 part of the chemical in 2,500 parts water. In a high proportion of cases the lesions cleared promptly (Table 1).

Uncomplicated ammoniacal dermatitis cleared within an average of four days. Cases in which there was superimposed Staphylococcus aureus responded within an average of six days: and those with Monilia albicans infection responded within an average of seven days.

Stephens[9] reported 250 cases of a similar nature with completely satisfactory results; and in an additional 1,500 cases, in which the material was used prophylactically, none of the patients had ammoniacal dermatitis.

Several of the mothers reported mild irritation of their hands when using the rinse solution. Otherwise no adverse effects were noted. As the concentrate OBPC is a strong skin irritant, it must be kept out of reach of children.[8] In rabbits the lethal dose by mouth is 1.5 gm. per kg. of body weight.[5] When a solution of 1:300 was applied to the skin of rabbits, no evidence of absorption was observed.[5]

1125 East 17th Street, Santa Ana.

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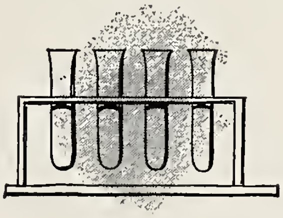

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*Commercially available as Diaper Safe.

What Scope Health Insurance?

EDWIN F. DAILY, *M.D.*, New York
Vice-President, Health Insurance Plan of Greater New York

Health Insurance Plan of Greater New York (hip) has 14 years' experience in providing what we consider a broad scope of medical care for insured men, women and children in a predominantly urban area. The number currently served is 637,000.

"Broad scope" and "comprehensive coverage" are vague terms and require definition by each person using them. In hip where medical care is provided by 31 medical groups, the insured persons prepay and are entitled to any needed medical care, carried out at home, in a physician's office or in a general hospital, by the following types of physicians in each medical group: family physicians, internists, pediatricians, obstetricians-gynecologists, general surgeons, orthopedists, ophthalmologists, otolaryngologists, radiologists, urologists, dermatologists, allergists, neurologists and pathologists. Although each medical group has a psychiatrist, we provide only diagnostic and consultation services by these specialists.

In addition to these services provided by each medical group, the groups collectively allocate 96 cents per enrollee per year to a Special Services Fund. This fund pays the full cost for unlimited visiting nurse service, ambulance service and diagnosis and treatment by a wide variety of special consultants serving all medical groups. These special consultants are in fields such as cardiac and thoracic surgery, surgery of the middle ear, scoliosis surgery, reconstructive hand surgery, oral surgery, physical medicine and exchange transfusion. This fund also pays the entire cost of a great many of the more unusual laboratory tests that the average clinical laboratory is not equipped to perform. The cost of cobalt therapy and of second opinion-consultations for serious conditions is also paid for by this fund.

All of these services are provided without any requirement that there be a waiting period between joining the plan and receiving services for preexisting conditions or pregnancy, without any charge above the premiums paid for any income group, except for an optional fee of $2.00 for home calls late at night. All immunization agents are provided without charge and injectable drugs given in the office or at home are provided at cost.

The average number of services provided by the physicians each year per insured person is currently 4.7. A service is defined as a face-to-face meeting of doctor and patient (except for radiology, where the definition is a patient contact with the Radiology Department on a single day). The highest utilization rate is in the first year of life, 13.8 services per year; and the lowest for the ages 15 to 24, 3.6 per year. For enrollees over 70 the rate is 7.6 medical services per year. Eighty per cent of all medical services are provided in the office, 12 per cent in hospitals and 8 per cent in patients' homes. The proportions of medical services provided by the various types of physicians are as follows:

	Per Cent		*Per Cent*
Family physicians and Internists	49.3	Ophthalmologists	3.6
Pediatricians	11.5	Orthopedists	3.4
Obstetricians-gynecologists	7.4	Otolaryngologists	2.6
Radiologists	6.8	Dermatologists	2.6
General surgeons	5.3	Urologists	1.6
Allergists	5.0	Neuro-psychiatrists	0.6
		Other (except Pathologists)	0.3

Laboratory tests for office patients average 2.73 per enrollee per year.

The average premium income currently received per insured person for the above services is approximately $42.60 per year. In 1961 over 90 per cent of the hip premium income was paid to the medical groups.

Do people wish this scope of service and can they afford to pay the cost of providing it?

I see many officials of organized labor (and most health insurance in New York today is obtained through union negotiations with employers) and practically all of these leaders in recent years wanted to buy at least the coverage provided by hip. Many have expressed a wish to have dental and drug coverage also.

The union officials in our area are insistent that there be no means tests and that all income levels in the unions have the same premium and the same medical care benefits. They consider it equally important that there be no charges to the patients for any medical care provided under the Plan—that is, the premium must pay all the costs.

Can they afford it? Many unions in New York City with members who are the lowest paid people in the labor field have successfully negotiated with

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Presented at the California Medical Association Annual Conference of County Society Officers, February 17, 1962.

Submitted March 26, 1962.

the employers for both HIP medical care and Blue Cross hospital coverage.

When there are welfare funds or when employees and employers split the cost of medical and hospital coverage, the cost of coverage as extensive as that given by HIP can be managed. However, when families must pay the entire premium for HIP and Blue Cross, as is true under our individual enrollment policies in both urban and rural experiments, it appears from our experience that relatively few of them will purchase coverage of that extent. After six years of effort in a farm area where average family incomes are less than $3,000 a year, only 820 persons in a population of about 50,000 are insured. When HIP offered coverage to persons and families not in groups and they had to pay the full cost of HIP and Blue Cross (the full cost amounting to more than $300 a year at new group rates for a family with one or more children) fewer than 10,000 persons in New York City became insured. The insurance offered was considered attractive, taking in persons with diabetes, epilepsy, asthma, heart disease and most other chronic conditions as well as persons requiring surgical treatment, but apparently was too costly for most family budgets.

Several features in a group practice prepayment plan of the HIP type make the provision of a broad scope of coverage easier and less costly than most indemnity plans:

1. A partnership of 20 to 60 physicians working together in a medical group center with an x-ray department, laboratory, physical therapy department and central record room has the potential for a more efficient and economical service than the same number of physicians with similar equipment in solo practice. For example, the Permanente Medical Group in Southern California has one centralized laboratory for all diagnostic tests—except urine, blood cell counts and hemoglobin determination—for over 300,000 members. One has to see the actual cost data for each type of test and see the experience of such fully automated laboratories to appreciate how efficient and economical this can be, in addition to improving the quality of work.

2. When there are no fees to discuss or collect and no insurance forms to fill out for indemnities, physicians have more time for service to their patients.

3. With a team of physicians in a medical center, they can take over for one another during illnesses, vacations, hours off or emergency periods, so that the medical needs of patients can be served more readily at all times, including emergency services at night or on weekends.

4. Payments for medical care on a capitation basis rather than fee for service avoids financial incentives for unnecessary medical or surgical services. Studies of the hospital admission rates have shown they are 20 per cent lower for members of prepaid group practice plans than for identical populations under fee-for-service plans in New York. Imagine the increased scope of medical care coverage which could be purchased in the United States if the cost of hospital insurance could be decreased 20 per cent!

Other professional services

In a medical care plan such as HIP we find it important to provide services of other professional workers besides physicians. I have already mentioned unlimited visiting nurse services. Most of this service is for chronically ill persons at home.

We have on our central staff five highly skilled "Community Resources Consultants" who serve all our medical groups. These consultants are, of course, social workers with many years of experience in New York City and are thoroughly familiar with all of the more than 2,000 voluntary or public agencies in fields related to health. They know what services these agencies provide, the eligibility requirements, if any, and how referrals should be made for prompt and effective action. The problem for the consultant to deal with may concern such things as convalescent home care, extensive rehabilitation, terminal care for cancer patients at home, admission to a mental institution, care for a mentally retarded child, the need for a brace or hearing aid, etc. Few if any physicians have the knowledge or time to make arrangements for such service. We have found consultation of this type a very valuable part of our program.

We have two full-time nutritionist-dietitians who work with all our medical groups, helping the physicians prepare dietary instruction sheets, discussing dietary problems with separate groups of diabetic, obese or hypertensive patients, and serving in individual consultation for the more difficult diet problems, referred by physicians. This is all for the ambulatory office patients and is not related to in-hospital dietary problems. This service has been found to be not only a time saver for the physicians, but, even more important, a specialist in the field is more aware of the racial, religious and economic problems related to diet instructions and is often more up to the minute in new knowledge in the field of nutrition than the average physician.

Although every physician is a health educator, we have found that a staff of five specialists in the field (the Director has a Ph.D. in health education) has been welcomed by both physicians and patients.

Each medical group has regular meetings of subscribers at which a wide range of topics in the field of health is discussed, the meeting usually being held in public school auditoriums. Subjects such as the Adolescent Girl, Mental Health, Health Problems of Older People, Allergies, Vitamin Quackery, the Doctor and his Equipment, Cancer, etc., are covered. Subscriber committees may help select the topics. The doctors in the medical groups who are best informed on the subjects are the discussion leaders. More intensive health education discussions with small groups of patients with the same illness, such as diabetes, hypertension and obesity, have also been developed.

In addition, regular health bulletins go to all insured families from each medical group. The bulletins carry important health information on a wide range of health and administrative topics and up-to-the-minute important information. For example, when the Salk vaccine came out, every family was urged to get every member immunized promptly and most of the 31 medical groups set aside special hours on evenings and weekends to accommodate them. For a year afterwards, reminders to get Salk vaccinations were published, urging completion of the recommended schedule of injections. Home calls, a medical problem all over the country and particularly serious in the East, has been the subject of a whole series of health education articles in an effort to achieve better understanding on this matter between patients and physicians.

One cannot discuss scope of service without giving serious consideration to the quality of service. A broad scope of inferior quality might cost the same as a narrower scope of high quality. Since HIP is responsible for providing medical care for (not cash benefits to) its 637,000 enrollees, it must be directly concerned with the quality. A medical board, a majority of whose members are leaders from medical schools and teaching hospitals, has for 14 years established professional standards and approved the qualifications of training and experience for each of the 1,000 participating physicians. One of the earliest standards was that maternity care would be provided only by board-qualified specialists in obstetrics and gynecology, and that pediatric care of young children would be provided only by board-qualified pediatricians. All specialists are required to be either board certified or, for the younger assistants in a department, to have completed residency requirements of their board.

The most important member of a medical team, we call the family physician. Our current requirements for family physicians are two years' approved residency in medicine after internship. Each adult in HIP picks his own family physician in the medical group to whom he goes for health examinations as well as for any illness. The family physician is responsible for the medical work-up, diagnosis and treatment of his patients. If the skills of any of the group specialists are needed for consultation or surgical operation, appropriate referrals are made.

Scope of service is not static

One of the most fascinating features of medical care administration is the changing pattern of medical practice resulting from new knowledge in the scientific field. For example, since HIP covered all types of surgical treatment, when operations on the heart became successful in the late 1940's, insured persons were sent to Johns Hopkins and we paid for the services of Dr. Taussig and Dr. Blalock. Now this service is provided for us by several teams of skilled cardiac surgeons in New York City. This is one of dozens of examples of a completely unpredictable increase in the cost of a comprehensive medical care program.

When the Salk vaccine became available, its utilization by HIP members substantially increased total office utilization rates over a period of two years. I presume this utilization will be more than compensated for by the long-range reduction in the number of patients with paralytic poliomyelitis.

We are currently helping in the testing of the new measles vaccine. When it is approved and generally available, within a year or two, we will endeavor promptly to vaccinate all children covered by HIP.

Working with the New York Association for the Blind, we are endeavoring to assure early detection of glaucoma by routine tonometric examination, done at least once a year by specially trained nurses and technicians, of all persons over 40 years of age. No one questions the importance of this service but it is not routine in health examinations by either family physicians or ophthalmologists; and as it is introduced into a medical care program, it takes time and adds to the total cost of medical care.

A more dramatic development is the use, by a team of skilled specialists, of an artificial kidney for certain serious illnesses. It is not needed very often, but when it is needed, it is a life-saving measure. The cost is very high.

The many new scientific developments in medicine each year must be encompassed in a medical care plan such as HIP. Coverage of new advances often increases the total cost of providing service.

Prepaid group practice offers the possibility of the most comprehensive scope of health insurance through its more efficient and economic organization and its control of quality.

Health Insurance Plan of Greater New York, 625 Madison Ave., New York 22.

Fatigue Fractures in Track Athletes

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• Pain in a foot or in the lower leg, not related to specific injury, in a track athlete who does a great deal of running, is the first symptom of fatigue fracture. X-ray films taken at the time pain begins may show no abnormality. Films taken a month or more later may show formation of callus, and perhaps a fracture line, at the point of pain.

Usually no treatment beyond cessation of running for two months or more is needed.

Since the incidence is highest in middle-distance runners who train intensively—quarter-milers in particular—and may be related to the hardness of the running track, limiting running to alternate days and doing part of it on grass may help in prevention.

UNLIKE THE USUAL MUSCLE pulls and ligamentous sprains that one encounters in the physical care of track athletes, which are invariably related to a specific traumatic episode, fatigue fracture is usually not associated with a definite injury. With awareness of certain peculiarities in the clinical pattern, however, one can come to a tentative and ultimately a definite diagnosis in these sometimes perplexing cases.

Clinical Aspects

Typically the athlete, most often a middle-distance runner, complains initially of insidious onset of an aching or soreness of a leg or foot not unlike that of leg or foot strain, or "shin splints." Most commonly, the pain is localized to the lateral region over the distal fibula. In some instances it may be in the lateral portion over the proximal fibula, and occasionally over the medial aspect of the shin. If the foot is involved, the tenderness is over the affected metatarsal bone. The discomfort is made worse by running and will lessen or abate with rest or ordinary walking. The usual measures of whirlpool or manual massage, taping or local injections of cortisone give temporary relief but on resumption of vigorous running the symptoms recur.

Upon physical examination tenderness will be noted over the bone at the involved site. Although the tenderness may appear to extend along the periosteum or tendinous structures for some distance either proximally or distally, there is always a point of maximum intensity at the point of fracture.

Usually the pain spontaneously subsides after three or four months if the athlete does no running,

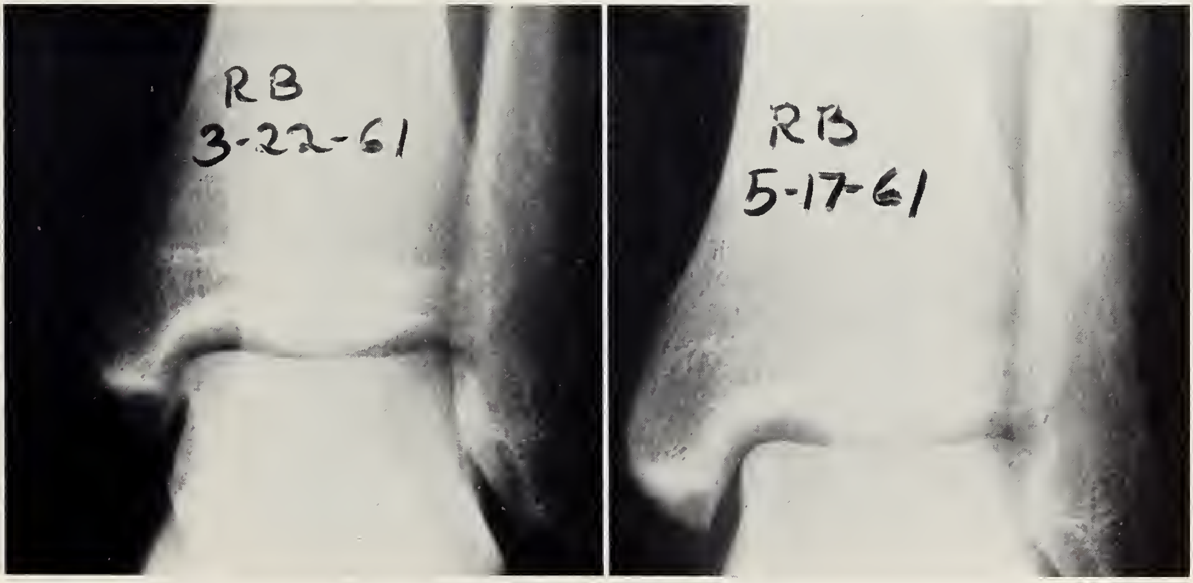

Figure 1.—(Case 1). *Left*, x-ray film at time of onset of pain in distal fibula, showed no abnormality. *Right*, x-ray two months later showed obvious healed fracture at site of previous pain.

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Submitted February 2, 1962.

and training then can be resumed. Occasionally, the symptoms are more prolonged and an entire season may pass without a return to competition.

Roentgenologic Studies

At the onset of symptoms, roentgenologic examination, including spot films, may show no evidence of fracture (Figures 1, 2, 4). After three to four weeks, a localized area of periosteal irritation may be noted, and sometimes a faint radiolucent line traversing the width of the involved bone may be visualized (Figure 3). After eight to twelve weeks, near the time of abatement of symptoms, x-ray films will show formation of callus, occasionally about an obvious fracture line (Figures 1, 2, 3, 4). In most instances, this observation will establish a diagnosis that has been elusive up to this time.

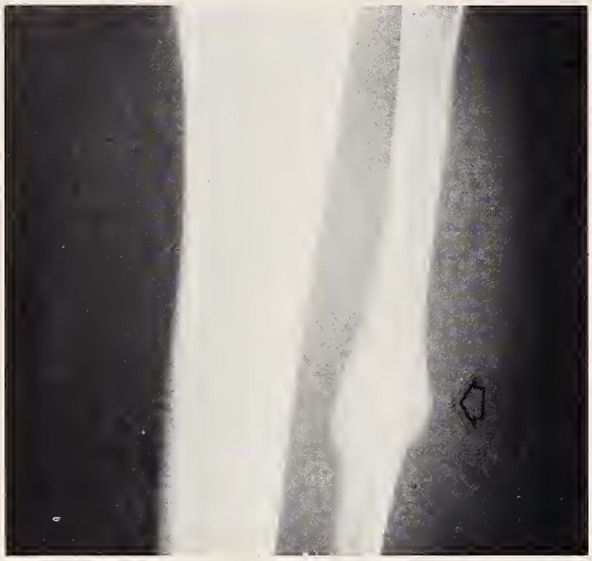

Figure 2.—(Case 2). X-ray film, taken after two months of pain localized in upper lateral aspect of the leg, interpreted as showing healing fatigue fracture of upper fibula.

Treatment

Since ordinary activity usually is not particularly painful, immobilizing the site of fracture is not often necessary, although if symptoms are severe a walking plaster cast may be necessary.

Discussion

Prevention of fatigue fracture depends upon altering the training program. Such lesions, which occur most frequently in athletes who run the middle-distance events, appear to be related to the intensiveness of the training program and perhaps to the hardness of the running track. Most coaches therefore instruct their runners not to work out vigorously every day and to do part of their training on grass or soft courses. That the nature of the running specialty is related to fatigue fracture is indicated by the relatively high incidence of such lesions among quarter-milers, who must keep a strong pace from the very beginning of the race and sprint at the finish. In their training program, these runners must do sprints for speed and run distances for endurance. This combination of requirements might lead to the development of fatigue fracture.

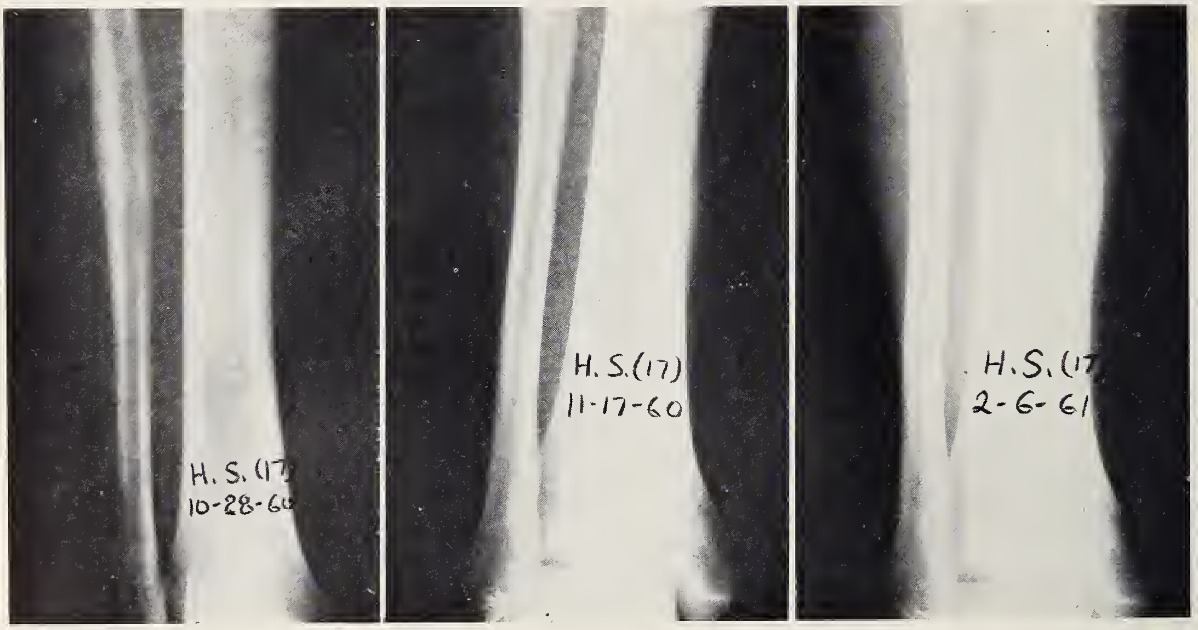

Figure 3.—(Case 3). *Left*, x-ray film taken soon after beginning of pain over middle of shin, showing no abnormality. *Center*, film three weeks later showing periosteal reaction along medial aspect of mid-tibia. *Right*, after another three months an x-ray film showed a healing fatigue fracture of the tibia.

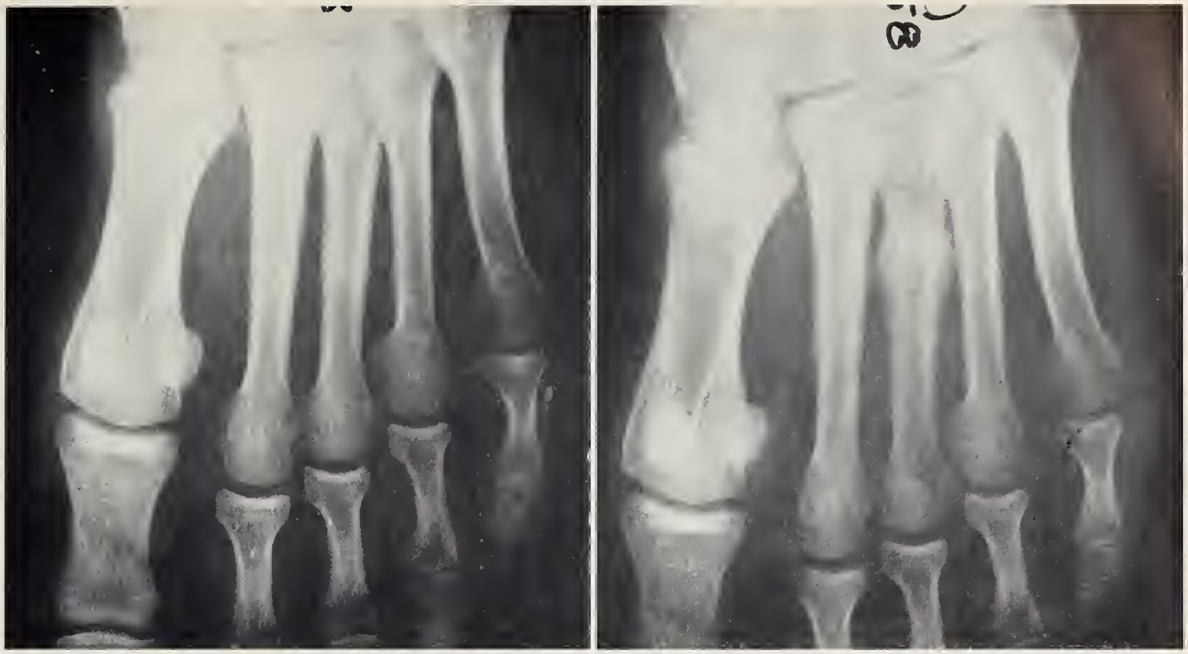

Figure 4.—(Case 4). *Left,* film at time pain in foot began, showing no abnormality. *Right,* a month later a film showed healing fatigue fracture of the shaft of the third metatarsal bone.

REPORTS OF CASES

CASE 1. A 19-year-old quarter-miler complained of pain of recent onset localized to the distal fibula. No abnormality was noted on x-ray examination (Figure 1). The patient quit running for some two months, then resumed training. X-ray films taken after he had returned to active running showed an obvious healed fatigue fracture of the distal fibula.

CASE 2. An 18-year-old quarter-miler had pain of two months' duration localized to the upper lateral aspect of the leg. X-ray films were interpreted as showing a healing fatigue fracture of the upper fibula (Figure 2).

CASE 3. A 17-year-old half-miler had pain that had begun only a short time before over the middle of the shin. No abnormality was observed in x-ray films. Films taken three weeks later showed periosteal reaction along the medial aspect of the midtibia, and after another three months had passed a healing fatigue fracture of the tibia was shown (Figure 3).

CASE 4. A 19-year-old quarter-miler noted pain in his left foot, especially over the third metatarsal bone. X-ray films showed no abnormality. Films taken a month later revealed a healing fatigue fracture of the shaft of the third metatarsal bone. (See Figure 4.)

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Bronchial Division in the Treatment of Pulmonary Tuberculosis

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• Bronchial division was carried out in seven patients with tuberculosis for whom no other procedure was feasible. Results were good in three cases. Complications developed in another case but the ultimate result was expected to be good. Two patients died. One had spread of disease and recanalization of the bronchus.

THE USE of bronchial occlusion as treatment for tuberculous cavities was advocated at least 25 years ago, principally by Adams[1] and by Coryllos.[5] In most of the early clinical cases, occlusion was brought about by cauterization.

In 1952, in the German literature Nissen and Lezius[6] reported 16 cases of advanced cavitary tuberculosis treated by bronchial ligation and division. Impressed with the results, Bogush,[2] in Russia, operated on 50 patients and reported the results in 1957. Cavity closure was obtained in 43 cases.

Independently Chamberlain of New York started using bronchial ligation in 1948 and reported on a series of 25 cases in 1960. Chamberlain and McNeill's[4] communication, the most comprehensive to date on the subject, reviews considerable historical and experimental background.

In the present study, bronchial division was used in seven male patients for whom no other surgical procedure was feasible. The results in three of these patients were good. In another the sputum became negative for tubercle bacilli but at last report there was a small residual empyema pocket as a complication of the operation. It was expected to heal. Two patients died. Another had a spread of disease, followed by recanalization of the bronchus, and the sputum remained positive.

In recent personal communications, Chamberlain[3] said that his current results with this operation are running about 50 per cent good. He still does not understand why one patient does exceedingly well and in the next all sorts of complications develop.

Brief case reports of the seven patients operated upon by the author follow. A wide variety of complications were encountered.

CASE 1. A 62-year-old man had a right thoracoplasty for a right apical cavity in 1957 (Figure 1, upper left). The cavity was not closed by the operation (Figure 1, upper right and 1, lower left) and the sputum remained positive. The organisms in this patient had become resistant to the major antituberculosis drugs. Since his respiratory reserve was low and it was feared that resection might entail pneumonectomy, bronchial occlusion was decided upon. The right upper lobe bronchus was divided in August, 1960. The postoperative course was extremely smooth and cultures of sputum and of gastric contents for tubercle bacilli promptly became negative. The cavity disappeared (Figure 1, lower right) and the patient was discharged.

CASE 2. A man of 47 with tuberculosis far advanced when it was discovered in 1959 had a cavity remaining at the right apex after 10 months of chemotherapy. The sputum remained positive on culture and the organisms had lost their susceptibility to the major antituberculosis drugs. On August 30, 1960, the right upper lobe bronchus was divided after the lung had been mobilized extraperiosteally as suggested by Chamberlain. The extraperiosteal space contained air for two months but finally filled with fluid. A few weeks later it contained air again, and it was then realized that a bronchopleural fistula had developed. Drainage of emphysema and a thoracoplasty were carried out. The sputum became negative for tubercle bacilli but a small residual empyemic pocket (which was healing rapidly at the time of this report) remained.

CASE 3. The patient was a man 42 years of age who had advanced silicotuberculosis with bilateral cavitation that had been treated for many years with various antituberculosis drugs. The left side was operated upon first. After extraperiosteal mobilization of the lung, the apical-posterior segmental bronchus was divided. Because of dense scarring and matted silicotic nodes at the hilum, the anterior segmental bronchus could not be reached. The anatomical configuration of the left hilum, of course, makes dissection of the upper lobe bronchus more difficult and hazardous than dissection on the right. The cavity decreased in size only temporarily after

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Read at a meeting of the California Thoracic Society, San Diego, February 9, 1962.

Submitted March 15, 1962.

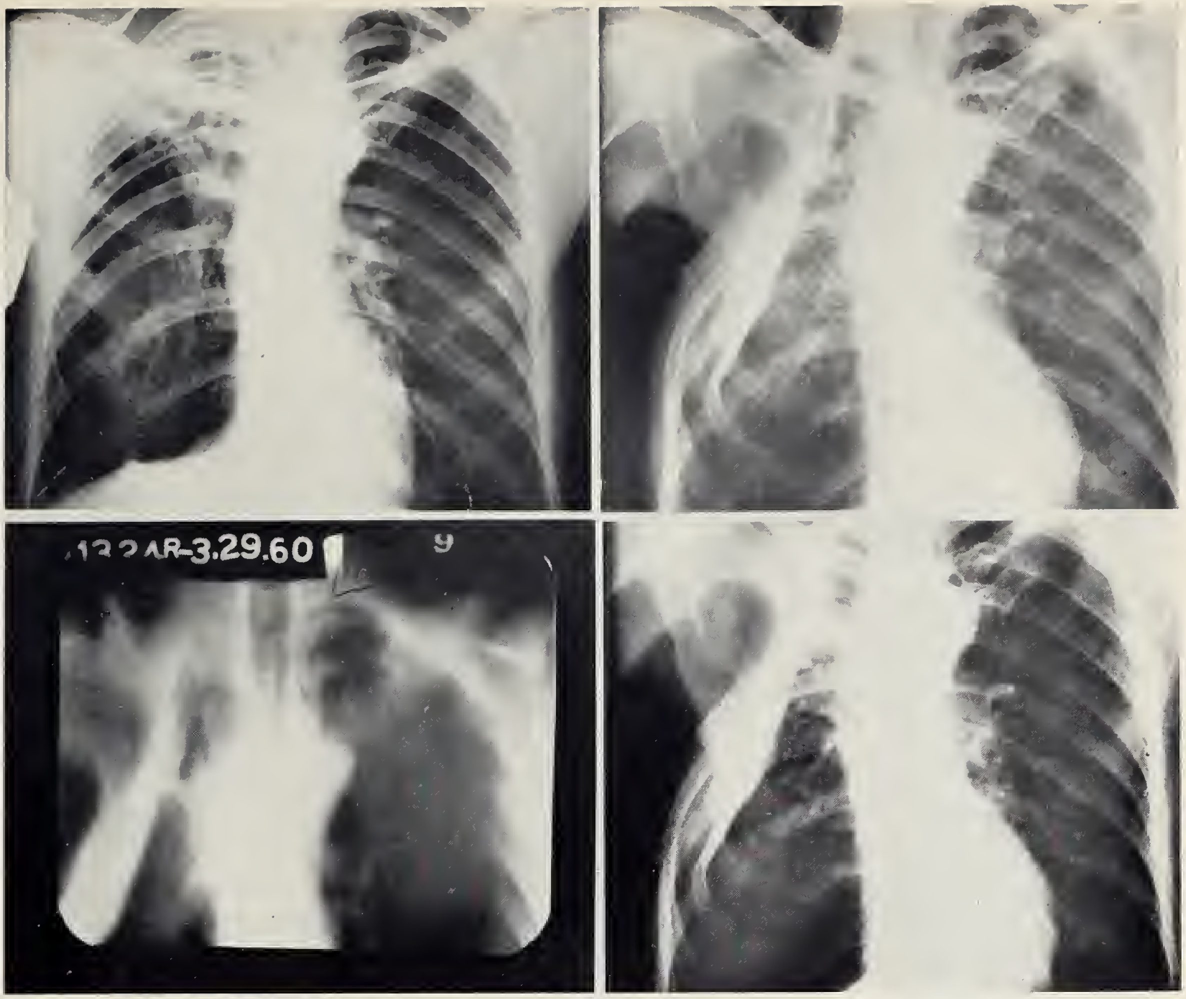

Figure 1.—(Case 1). Picture at upper left, right apical tuberculous cavity for which thoracoplasty was performed in 1957. In the picture at upper right, cavity still present beneath right thoracoplasty. At lower left, the cavity is seen better on a planigram. In roentgenogram at lower right, the cavity is no longer seen after bronchial division. The aerated area beneath the thoracoplasty is emphysematous lung tissue.

the operation. When it again reached its original size, cavernostomy and thoracoplasty were done, reducing the cavity to a narrow sinus. Even though the patient's respiratory reserve was extremely low, division of the right upper lobe bronchus was attempted. During dissection of the hilum which was matted with silicotic nodes, the patient died of uncontrollable hemorrhage from the pulmonary artery.

This case illustrates difficulties that may be encountered in attempting division of the left upper lobe bronchus as well as special hazards associated with silicosis.

Case 4. The patient, a 35-year-old man, had far advanced, bilateral pulmonary tuberculosis. Although the sputum rather promptly became negative for tubercle bacilli, a large cavity remained at the right apex and there was residual disease throughout the remainder of the lung. Instead of an extraperiosteal procedure, the right upper lobe bronchus was divided and a three-rib thoracoplasty was carried out. Convalescence was uneventful.

Case 5. The patient, a 34-year-old Oriental man, with mental disease, had far advanced bilateral tuberculosis (Figure 2) which apparently responded fairly well to chemotherapy, leaving what appeared to be a shrunken, destroyed right upper lobe (Figure 2, upper right and lower left). Thoracotomy was performed with the intention of carrying out right upper lobectomy. However, much more extensive disease was found than was suspected from the roentgenogram. Large dense, caseous lesions involved both the middle lobe and superior segment and extended across the fissures. Instead of carrying out pneumonectomy, or leaving the inferior division of the lower lobe, which would have required an extensive space filling procedure, division

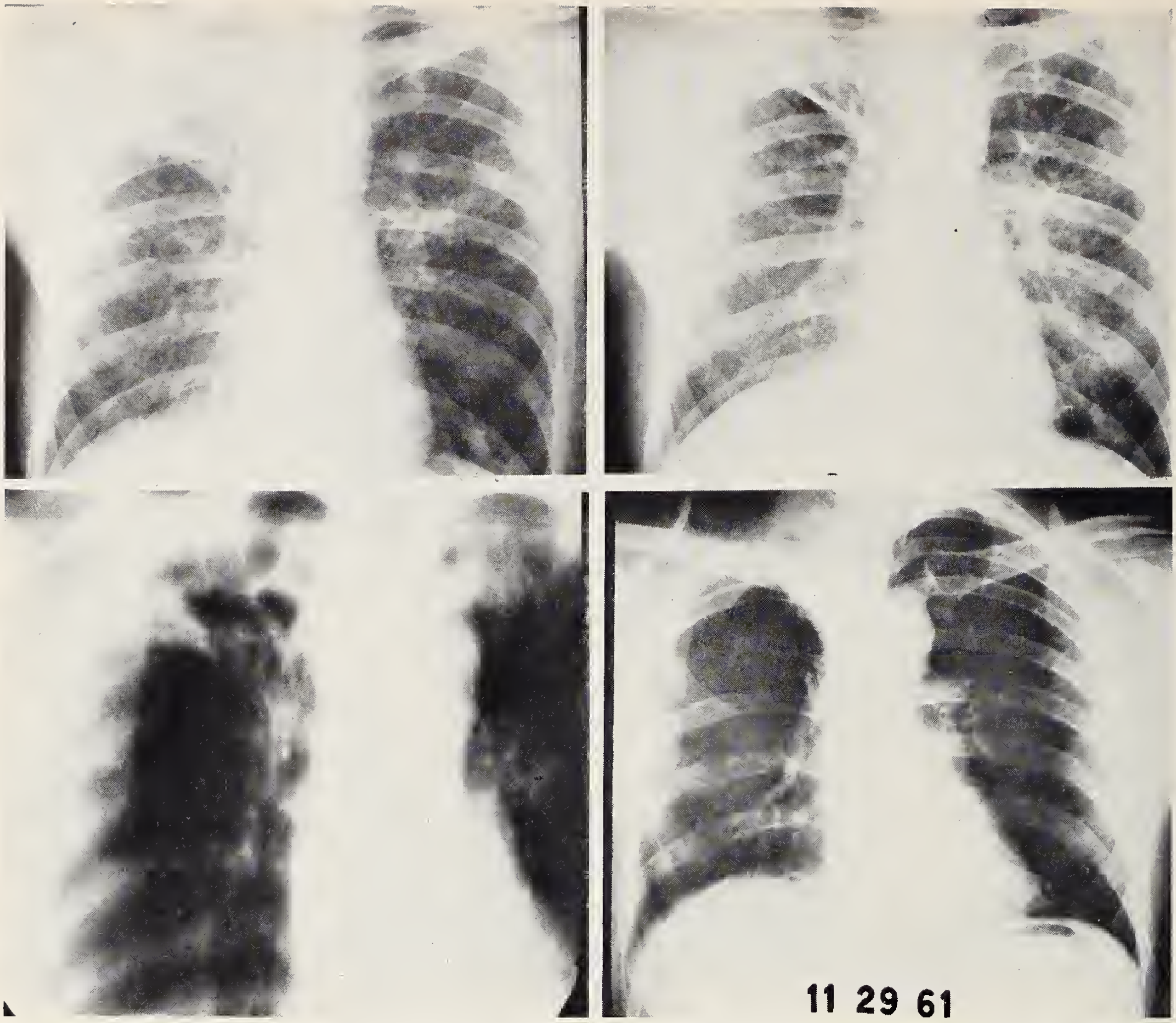

Figure 2.—(Case 5). Picture at upper left is pretreatment roentgenogram showing far advanced bilateral pulmonary tuberculosis. At upper left is a roentgenogram taken after eight months of antituberculosis chemotherapy. The planigram at lower left, taken preoperatively, shows shrunken right upper lobe with cavitation. The picture at lower right is a postoperative roentgenogram taken three months after division of the right upper bronchus and three-rib thoracoplasty.

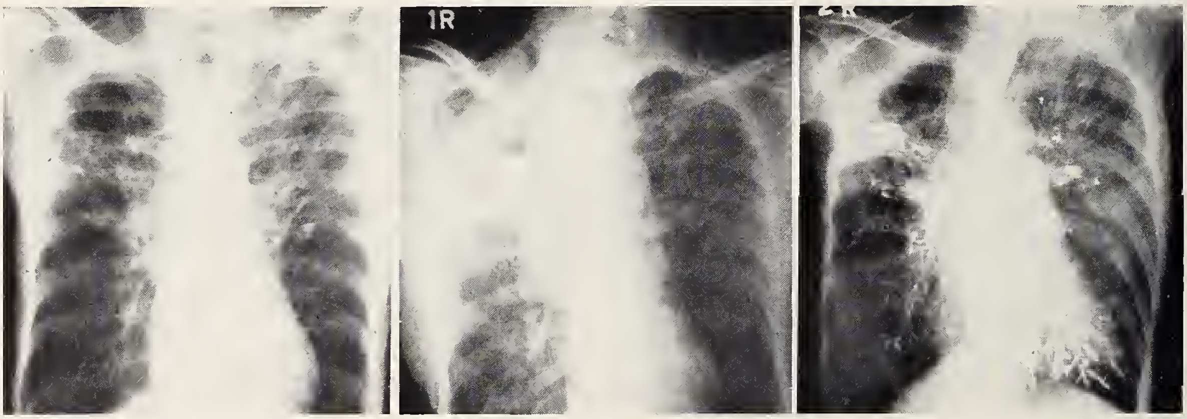

Figure 3.—(Case 6). *Left*, roentgenogram after 11 months of antituberculosis chemotherapy, showing large right apical cavity. *Center*, roentgenogram taken two days after division of the right upper lobe bronchus and three-rib thoracoplasty, showing cavity definitely smaller. A contrast medium had been instilled into the cavity at operation. *Right*, bronchogram taken two months postoperatively, showing cavity much larger and recanalization of the bronchus.

of the right upper lobe bronchus and a three-rib thoracoplasty was decided upon. The postoperative course was smooth and prompt shrinkage of the upper lobe occurred. At last report the sputum was negative on culture.

Case 6. The patient was an Apache Indian, 30 years of age. After 11 months of treatment with antituberculosis drugs, he had a huge right apical cavity (Figure 3) even though the sputum had become negative. His respiratory reserve was low and he was slightly dyspneic. The right upper lobe bronchus was divided and a small amount of contrast medium (Dionosil®) was instilled through the distal bronchial stump in order that the cavity could be observed roentgenographically. At the same time a three-rib thoracoplasty was done. A film taken on the second postoperative day showed the cavity to be smaller (Figure 3, center). However, the cavity then became progressively larger and a bronchial fistula was demonstrated both by needle aspiration of the cavity and by bronchographic examination (Figure 3, right). The patient died suddenly two and a half months postoperatively from right heart failure with pulmonary edema. At autopsy, the bronchus was found to be recanalized despite the fact that at operation the cut ends had been separated by at least 3 cm.

Case 7. The patient, a 59-year-old man, had had tuberculosis for many years with known cavitation and postive sputum for at least ten years in spite of the administration of many different antituberculosis drugs. The maximum breathing capacity was 43 liters per minute and the 3-second vital capacity was 55 per cent (normal 94 per cent). The right upper lobe bronchus was divided and a 3-rib thoracoplasty was done. The patient did well for three weeks but then had a massive spread of disease, the lesions involving the middle lobe and the anterior segment of the upper lobe. This cleared later, at least at the base, but cavities reappeared, indicating recanalization of the bronchus. Incidentally, Bogush[2] reported five cases of recanalization although he did not specify as to whether he divided or merely ligated the bronchi in those cases.

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Double Aortic Arch

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• The recognition of a double aortic arch which causes significant constriction of the esophagus and trachea is relatively easy if the cardiac symptoms caused by this anomaly are borne in mind. Once suspected, the diagnosis may be confirmed readily by radiographic examination of the esophagus with a barium swallow. The treatment consists of division of the ductus arteriosus (or ligamentum) and of the smaller component, usually the anterior, of the double aortic arch.

SIX PAIRS of branchial arches are present in early embryonic life and the aortic arch normally arises from the fourth left branchial arch. The distal portion of the right fourth arch normally becomes obliterated and the proximal segment becomes the first part of the subclavian artery. If the left rather than the right arch undergoes resolution, a right aortic arch results. When both arches persist a complete vascular ring surrounds the esophagus and trachea, one arch (usually the larger) passing behind those structures to join the smaller anterior arch in that hemithorax in which the proximal thoracic aorta descends.

The presence or absence of symptoms due to a double aortic arch depends upon the size of the ring. If it is large there will be no significant compression of the trachea or esophagus and the patient will be free of complaints. If there is a tight constriction of these structures, a classic combination of symptoms results. These consist of (1) *stridor,* which is both inspiratory and expiratory in type, (2) *dysphagia,* (3) attacks of *cyanosis,* particularly with feeding, (4) suprasternal, supraclavicular, substernal and subcostal *retraction* on inspiration, (5) a harsh, barking *cough,* and (6) a strong predilection to *pulmonary complications.*

The seriousness of this malformation and the necessity for proper surgical treatment in symptomatic infants is indicated by the report of Griswold and Young.[1] They described 19 patients with double aortic arch. In 14 of them the defect was not recognized during life and all of them died. The diagnosis was established in five cases and the patients were operated upon. In three of them, one component of the double aortic arch was divided and all three lived and did well. In two cases the constricting vascular ring was not divided and neither of the patients survived.

The symptoms resulting from this anomaly are often mild at birth and in the early days or weeks of life, but with growth and development and increasing arterial pressure they may become more alarming if not intolerable. However, numerous children born with this lesion have survived a number of years before they died of pulmonary complications attributable to it, or upon correct diagnosis have been relieved by proper surgical treatment.

The symptomatology associated with a double aortic arch is so characteristic that the diagnosis may be strongly suspected on the basis of clinical history alone. Verification may be obtained by fluoroscopic examination and films of the esophagus after a swallow of contrast medium. The lateral projection will demonstrate sharply localized anterior displacement of the esophagus at the level of the aortic arch. In the postero-anterior view compression of the esophagus from both the right and left sides will be noted. This condition can also be diagnosed by tracheography, bronchoscopy, esophagoscopy and angiocardiography or aortography, but these more complicated studies usually are unnecessary. It is important for the radiologist to determine, if possible, the hemithorax in which the proximal descending thoracic aorta is situated, for the ligamentum arteriosum usually lies in this chest and the surgical approach should be made through the corresponding side.

The surgical objective is to divide the constricting vascular ring. This seems relatively simple and straightforward, and indeed that may be the case. However, there are a great many possible combinations of this anomaly and the situation encountered at operation is apt to be confusing initially. It is imperative that the ring be divided at the most advantageous site in order to relieve completely the pressure on the trachea and esophagus yet not interfere with blood flow through any major vessel. Good exposure and careful dissection permit the surgeon to visualize and understand clearly the exact anatomical arrangement of the involved vessels. Thereafter surgical correction poses no particular difficulty. Usually it is most advantageous to divide the smaller anterior arch between the left common carotid and the left subclavian arteries. The ligamentum arteriosum (or ductus arteriosus) must also be divided.

Submitted March 9, 1962.

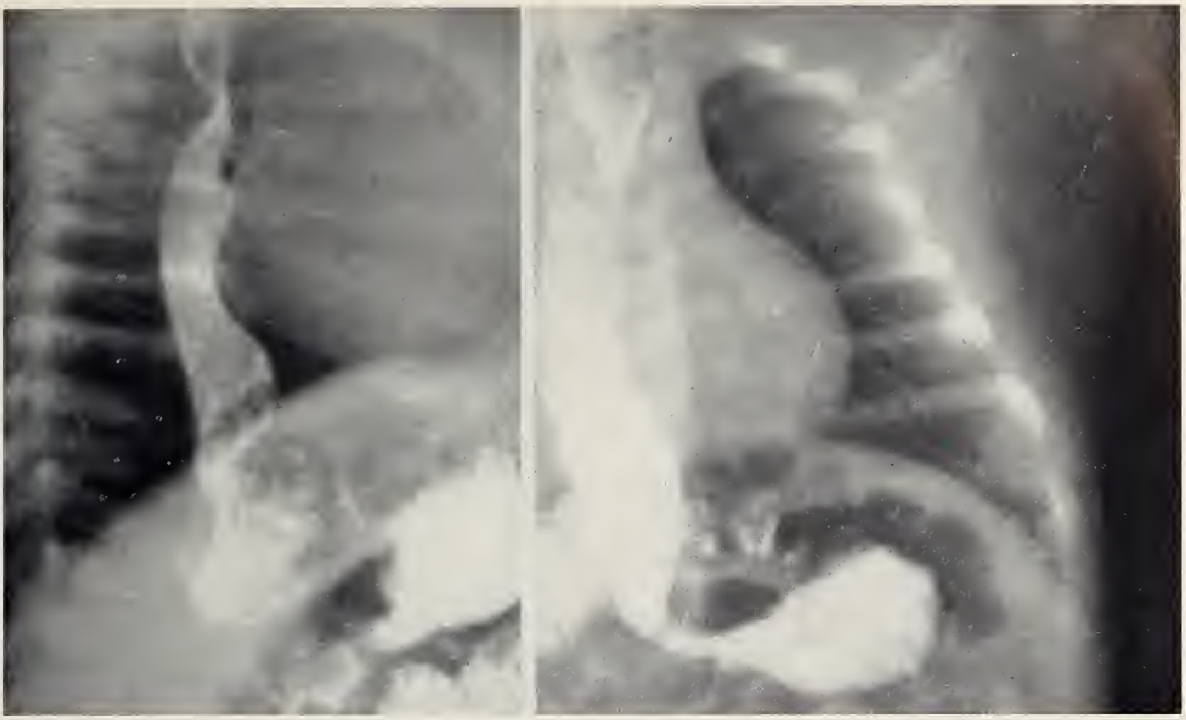

Figure 1 (Case 1).—*Left*, Right lateral chest roentgenogram with a swallow of iodized oil. Note anterior displacement of posterior esophageal wall at the level of the aortic arch. The esophageal displacement assumes a slightly oblique configuration from above downward from right to left. *Right*, Postero-anterior chest roentgenogram with iodized oil swallow. The compression of the esophagus from both the right and left sides at the level of the aortic arch is demonstrated well. The obliquity of the compression is again shown.

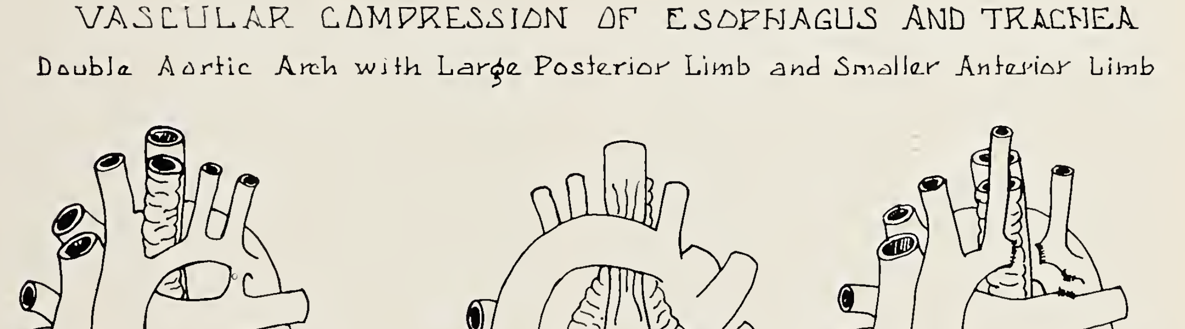
VASCULAR COMPRESSION OF ESOPHAGUS AND TRACHEA
Double Aortic Arch with Large Posterior Limb and Smaller Anterior Limb
A
Front View — Preoperative
B
Posterior View — Preoperative
C
Front View — Postoperative

Figure 2.—Diagrammatic representation of the anomaly encountered in Cases I and II while C. illustrates the essential points in the surgical treatment of these patients. (In an experience with four cases, it has not seemed necessary to tack the proximal segment of the divided anterior arch to the inner surface of the overlying sternum, as Gross[2] has recommended, in order to relieve adequately the pressure on the trachea.)

Case 1. The patient, a girl baby, was delivered spontaneously at term. Inspiratory and expiratory stridor with suprasternal, supraclavicular and subcostal retraction on inspiration was noted immediately after birth. The respiratory difficulty was aggravated by feeding, and cyanosis occurred frequently when the baby was given the bottle. A loud wheeze was audible, most pronounced in the midsternal region, but it could be heard clearly over both sides of the chest. The stridor, retraction, and cyanosis with feeding were relatively mild during the first few days of life but they became rapidly and progressively more severe. When the patient was six weeks old, roentgenograms after a swallow of iodized oil demonstrated the typical deformity caused by a constricting vascular ring (Figure 1). Left thoracotomy was performed the following day and the classic configuration was found. There was a large right aortic arch which coursed to the left posterior to the esophagus to join a somewhat smaller anterior arch which passed in front of those structures. The junction of the two arches to form the descending thoracic aorta occurred just distal to the origin of the left subclavian artery. The latter vessel as well as the left common carotid artery arose from the smaller anterior arch, while the innominate artery was the first branch of the larger posterior arch. A large and rather long ductus extended from the anterior arch just distal to the origin of the left subclavian artery and just proximal to the union of the two arches to the left main pulmonary artery below. The ductus was divided between vascular clamps and was found to contain a thrombus. The anterior component of the double aortic arch was then divided between the left common carotid and the left subclavian arteries (Figure 2). This effectively relieved the compression of the esophagus and trachea. Postoperatively the patient prospered. Growth and development from then on were normal and she has been completely free of dysphagia and respiratory symptoms.

Case 2. A boy baby weighing 2 pounds 8 ounces at birth was delivered in the seventh month of gestation by cesarean section. The mother had placenta previa with life-threatening hemorrhage. Although the baby obviously was premature, no gross abnormalities were apparent on physical examination shortly after birth. However, inspiratory and expiratory stridor with suprasternal, supraclavicular and subcostal retraction on inspiration were noted. These symptoms were aggravated by feeding and the baby suffered attacks of cyanosis which occurred only when he was fed. The infant's difficulties were relatively mild in the neonatal period but his symptoms increased steadily in severity. With superb nursing and pediatric care the baby reached an age of 82 days. At this time he had a loud inspiratory and expiratory wheeze that was heard best over the mid-sternal area but was clearly audible throughout both lung fields. He frequently became deeply cyanotic when fed and total apnea often developed on such occasions, requiring vigorous resuscitative measures for survival. Radiographic examination of the esophagus after a swallow of 90 per cent Hypaque® confirmed the presence of a double aortic arch (Figure 3). He was operated upon when 84 days of age and the anomaly in this case was almost identical to that found in Case 1. The ductus arteriosus was patent. The surgical procedure carried out was precisely the same as that described in Case 1. This completely relieved the constriction of the trachea and esophagus. Postoperatively the baby did well. He was able to swallow without difficulty, he no longer became cyanotic, and the other symptoms formerly associated with constriction of the vascular ring disappeared.

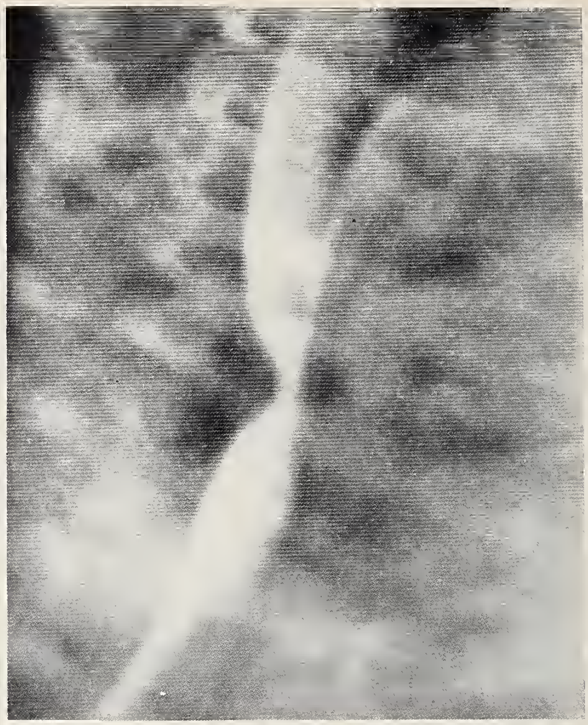

Figure 3 (Case 2).—Right lateral chest roentgenogram with swallow of Hypaque® showing typical anterior displacement of the posterior esophageal wall at the level of the arch. During the radiographic examination, this premature and seriously ill infant became cyanotic as soon as he was given the swallow of contrast medium and circumstances did not permit taking a postero-anterior film.

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Compression Neuropathy of the Ulnar Nerve

A Common Condition Occurring at Bed Rest

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• **Compression neuropathy of the ulnar nerve at bed rest appears to be quite common. The symptoms are dysesthesia, weakness and later atrophy in the area of distribution of the nerve. Special attention is required for prevention or for early discovery of the condition in time for treatment to bring about prompt recovery. Physical therapy with electrical stimulation may be useful in the more severe cases. When the condition is progressive or recalcitrant, anterior transplantation of the nerve may be necessary.**

THE SYNDROME of ulnar nerve palsy occurring at bed rest has long been recognized. Sir William Gowers[3] noted in 1886 that many patients sleeping with the elbow flexed complained of tingling and loss of sensation in the region supplied by the ulnar nerve. He observed also that if this condition was superimposed on profound ill health, intense localized neuritis could result. Gowers cited a case of ulnar nerve palsy occurring in a woman recovering from a long prostrating labor. Since that time bed-rest ulnar palsy has been mentioned in many of the standard text books of medicine, but given little further regard. When we directed our attention to this condition it became apparent that it was a common syndrome occurring in many patients lying in hospitals. In the majority of cases the palsy was mild and improved without any particular treatment. The following cases, which were among the more severe, illustrate this syndrome.

REPORT OF CASES

CASE 1. A man 57 years of age fractured his pelvis in a fall on November 23, 1953. Several days later numbness of the ulnar side of both hands was noted. Weakness followed in a few days, and later atrophy of the interosseous muscles. Electrical stimulation was given for two months without benefit. On examination two and one-half years later there was moderate atrophy of the hypothenar eminence and interosseous muscles of both hands, with severe weakness of adduction and abduction of the fingers, weakness of the deep flexors of the ring fingers and little fingers and sensory loss in the area of distribution of the ulnar nerve on the dorsum and palm of both hands. The ulnar grooves were shallow. The nerve was slightly tender and questionably enlarged, but did not subluxate. An electromyogram was reported as showing bilateral abnormalities consistent with neuropathic changes affecting the ulnar nerve at the elbow. No changes were found above the elbows or in the lower extremities.

Examination on March 11, 1960, showed slight progression of the weakness.

Comment: At first it was thought that the patient might have had injuries of the ulnar nerves at the time of the pelvic fracture, but he denied any symptoms referable to the ulnar nerve until several days after the accident. The ulnar nerve palsy apparently progressed during the five weeks of bed rest, and worsened after ambulation.

CASE 2. A 28-year-old painter fell 15 feet from a scaffold, landing on the right side of his chest and head, and was unconscious for three days. The first, second and third ribs on the right side were fractured. Also present were subcutaneous emphysema, pneumothorax and a linear fracture of the right parietotemporal region of the skull. X-ray films of the cervical spine showed no abnormality. Ten days after the injury, numbness of the little and ring fingers developed but the patient did not call his physician's attention to the condition. A month after leaving the hospital the patient noticed wasting of the small muscles of the hand.

Seven months later examination revealed atrophy and weakness of the small muscles of the hand supplied by the left ulnar nerve, and sensory loss outlining the distribution of the nerve. The ulnar groove was adequate but the nerve was slightly enlarged, and a tender nodule 1 cm. in diameter was palpable on the nerve at the ulnar groove. An electromyogram was reported to show extensive denervation activity in the intrinsic hand muscles supplied by the ulnar nerve, without changes in the flexor carpi ulnaris or finger flexors. By 16 months after the period of stay in hospital the atrophy and weakness of the muscles of the hand had fully re-

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Submitted December 13, 1961.

covered, but there was still a small area of diminished sensation on the radial side of the little finger.

Comment: The ulnar nerve lesion in this case might have been attributed to the fall except that the injuries then were to the right side of the body with no evidence of injury to the region of the ulnar nerve on the left. Also the patient denied any ulnar nerve disturbance until several days after he was admitted to hospital.

CASE 3. A 41-year-old roofer fell six feet from a ladder and received a compression fracture of the first lumbar vertebra. There had been no apparent injury to the elbow region. After nine days of bed rest in hyperextension the patient noticed numbness in the area of distribution of the ulnar nerve in both hands. The condition improved on the left side but progressed on the right, with increasing atrophy of the small muscles of the hand and vague cramping sensations in the elbow and forearm.

Eight months later there was atrophy of the small muscles supplied by the ulnar nerve in the right hand. No weakness of the flexor carpi ulnaris or finger flexors was noted. Diminished sensation was outlined in the ulnar nerve distribution. The ulnar grooves were deep but the nerve was slightly swollen and tender. There were no abnormal neurological findings in the left hand.

Electromyographic abnormality was found in the flexor carpi ulnaris and in the small muscles of the hand supplied by the ulnar nerve. Daily electrical stimulation over a three-month period produced no improvement. On the last examination, some 12 months after the onset of symptoms, it was noted that there was a complete paralysis of the small muscles of the right hand supplied by the ulnar nerve and no change in the previously noted sensory loss. Slight atrophy of the first dorsal interosseous of the left hand, without sensory loss, also was noted. Anterior transplantation of the ulnar nerve was recommended but was refused.

CASE 4. A 44-year-old man was thrown from an automobile in an accident and was unconscious for four hours. He had fractures of the right seventh and eighth ribs, the right scapula, right humerus, left ankle and the transverse processes of the second, third and fourth lumbar vertebrae. There was no injury to the left elbow. He had fractured the left elbow at age 10, with subsequent valgus deformity; but never before had there been symptoms referable to the ulnar nerve. One week after bed rest in hyperextension the patient noted numbness in the ulnar area of the left hand. Five months later he had a gunstock deformity of the left elbow. The ulnar groove was shallow and subluxation of the ulnar nerve on flexion was noted. The nerve was slightly swollen and tender. There was sensory impairment in the area of the ulnar nerve distribution in the hand, with minimal atrophy. The small muscles of the hand were weak. The patient could not be reached for a later examination.

Comment: Consideration must be given to the possibility of the ulnar palsy as a late sequel of the fracture and deformity of the elbow in childhood. However, the patient denied any symptoms referable to the ulnar nerve before his stay in hospital, he recognized the origin of his symptoms and was able to avoid further progression of his condition.

CASE 5. A 28-year-old man received severe injury to the head, with subarachnoid hemorrhage, bilateral abducens palsy and cerebellar contusion, multiple rib fractures, rupture of the spleen and renal contusion in an automobile accident. There were no apparent injuries to the elbow. Upon neurological examination two weeks later, weakness of the small muscles of the right hand and sensory loss in the area of the ulnar nerve distribution were noted, in addition to the injuries of the central nervous system. The ulnar nerve in the right arm was swollen and subluxation occurred on the flexion of the elbow. The ulnar nerve in the left arm was also tender but did not subluxate, and there was no other neurological abnormality on this side. Prompt restriction of pressure by use of soft pads under the elbow stopped the progression of the ulnar palsy and improvement began within a month. It was no longer present six months later.

Comment: The time of the onset of ulnar palsy was not known since the patient was confused and did not spontaneously complain of difficulty. There was no evidence of direct trauma to the elbow. Prompt recognition of the condition and avoidance of compression appeared to prevent progression.

CASE 6. A 38-year-old man had fractures of the pelvis, rupture of the urinary bladder and a week of mental disorientation owing to an automobile collision. There was no evidence of injury to the elbows. He was immobilized in a body cast, and approximately ten days after admission he complained of numbness in the area of the ulnar nerve distribution in both hands. He had supported himself on his elbows when turning in bed. Atrophy of the small muscles of the hands on both sides was noted three weeks later.

On examination seven months after the injury, moderate weakness of the muscles supplied by the ulnar nerve in the right hand was observed, with a claw hand, atrophy of the interosseous muscles and characteristic sensory loss. In the left hand there was decided weakness of the muscles supplied by the ulnar nerve, with atrophy and sensory loss.

Electrical stimulation was advised, but the patient did not return for reexamination.

Case 7. A 38-year-old woman received a fracture of the right humerus and of the right ankle in an automobile collision June 22, 1959. Both fractures were treated by traction for three days, and then casts were applied. There was no previous history of paresthesia. Numbness of the ulnar side of the left hand began June 29, 1959. Atrophy and weakness of the hand were not definitely noted until January 1960. On examination in March 1960, diminished sensation in the area of distribution of the ulnar nerve in the left hand, with weakness and atrophy of all the muscles supplied by the ulnar nerve. was noted. The ulnar nerve subluxated when the elbow was flexed.

Anterior transplantation of the ulnar nerve was carried out March 25, 1960, and the nerve was of normal appearance except for subluxation on flexion of the elbow. When the patient was examined November 1. 1960, there had been definite improvement of strength. Paresthesia and atrophy were diminished. On May 27, 1961, there was slight atrophy but normal strength in the interosseous muscles. No atrophy was discernible in the hypothenar eminence. Froment's sign* was present. So far as could be determined there was no sensory loss. Power in the finger flexors and flexor carpi ulnaris was normal. The nerve was well anterior to the epicondyle and was not tender.

Comment: The patient recalled that most of the time she lay in bed her left hand rested on her chest with the elbow resting flexed against the mattress. This position brought about subluxation of the nerve and allowed compression between the bone and the mattress.

Case 8. A 31-year-old man had repair of a diaphragmatic hernia on February 13, 1959, and his right arm was restrained to allow continuous intravenous infusions. After three days he noticed numbness of the right hand, which improved slightly when the arm was released. After he began walking he noted difficulty in using the hand, and atrophy subsequently developed.

On examination six months later pronounced weakness and atrophy of the hand muscles supplied by the ulnar nerve were noted. as well as weakness of the flexor carpi ulnaris and finger flexors of the fourth and fifth fingers, with a flexion deformity. Sensory loss could be outlined in the area of distribution of the ulnar nerve in the hand. The ulnar groove was shallow and the nerve was slightly swollen but subluxation did not occur.

The ulnar groove was examined surgically on August 7, 1959, and the nerve was observed to be slightly thickened in its lowest portion. Saline solution injected into the sheath hesitated at the mid-portion of the ulnar groove. The nerve was transplanted anteriorly beneath the flexor muscles.

By May 17, 1960, the atrophy of the right hand had improved, with normal power present in the interosseous and adductor pollucis muscles. There was distinct improvement in the forearm muscles supplied by the ulnar nerve. Sensory impairment was minimal.

Comment: The patient had observed no change in his ulnar palsy in the six months after it began. Although the findings at the time of operation were minimal, definite improvement resulted from anterior transplantation of the nerve.

Case 9. A 27-year-old male who received a head injury and fracture of the odontoid process in an automobile accident in October, 1960, was treated by traction upon Crutchfield tongs. Three weeks after admission he noticed dysesthesia in the ulnar nerve distribution of the right hand. Weakness and slight atrophy followed. In March. 1961, there was sensory loss in the distribution of the right ulnar nerve with slight atrophy of the first dorsal interosseous muscle on both sides. but no other weakness.

Case 10. Four days after operation for repair of a herniated intervertebral disk in the lumbar region a 51-year-old man noticed numbness and slight weakness of the small muscles of the right hand. A protective sponge rubber pad was taped to the right elbow and the patient avoided pressure on the ulnar nerve but the weakness and sensory loss did not improve. Anterior transplantation of the ulnar nerve was carried out some three months later. Slight swelling of the nerve was the only abnormality noted. When seen seven months after the operation the patient said numbness had abated in three months. Examination showed only slight atrophy of the first dorsal interosseous muscle with no weakness of any of the small hand muscles.

Comment: Ulnar nerve palsy did not appear in this case until several days after the spinal operation. Apparently it was caused by pressure against the elbow when the patient turned himself in bed. The ulnar palsy was on the same side as the bedside table. a relationship previously mentioned by Mumenthaler.[6] This is the only case in which we noted such a relationship. However, it was noted that the palsy was more frequent on the uninjured side of the body, suggesting that support of the body on the elbow was a major factor.

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*When opposing the thumb to the first finger to grasp a paper, the distal phalanx is sharply flexed to compensate for weakness of the adductor pollicis muscle. Also called *signe de journal.*

DISCUSSION

Many normal persons informed us that reading in bed with the elbows resting against the mattress would produce paresthesias in the hand after variable periods. Lewis, Pickering and Rothschild[5] in 1931, after a series of nerve compression experiments, concluded that these temporary changes were due to local ischemia of the nerve trunk. Denny-Brown and Brenner[2] showed that the cause of persistent difficulty was the result of changes in the nerve fibers and myelin sheath.

The cause of progression of the lesion following removal of compression is not clear. We agree with Conway[1] that the ulnar nerve is ordinarily capable of stretching sufficiently to compensate for motion of the elbow but are of the opinion that when intrinsic damage to the nerve impairs its elasticity flexion and extension may produce repeated trauma and progression of palsy.

The majority of the cases presented were in patients who were confined to bed because of trauma. However, the condition occurs also in patients who are confined to bed for other reasons. It is probable that in many cases symptoms attributed to toxic paralysis of a febrile illness are in fact due to compressive neuropathy of bed rest. It is apt to occur in patients confined in the supine position, or those in whom mobility is impaired by paralysis, coma, or restraining devices. The palsy was noted more often on the side opposite the injury. It is more common in patients with a shallow ulnar groove or who have a history of paresthesia in the hand following elbow compression. We believe it is particularly likely to occur when there is dislocation of the ulnar nerve.[7] When the patient is supine with the elbow flexed and the hand resting on the chest, the position of the arm permits the ulnar nerve to dislocate onto the medial aspect of the elbow, where it is compressed. In some patients the nerve can be sufficiently compressed between the bone of the ulnar groove and the mattress to cause palsy.

The first symptoms—dysesthesia and weakness—may appear a few hours to several days after bed rest. Atrophy may develop later. Pain is unusual. In some of the cases we observed, the forearm muscles were not affected, probably due to anatomical variation of their nerve supply. When the condition is recognized promptly and further nerve compression avoided, spontaneous recovery is usual. Mumenthaler[6] was unable to find a relationship between the type of mattress and the development of the paralysis. Despite padding of the elbow, progression occurred in one of the patients we treated. A small pillow under the posterior aspect of the arm and forearm, suspending the elbow, offers the best chance of relief of compression.

In the more severe cases physical therapy, especially electrical stimulation of the nerve, is administered. Anterior transplantation of the nerve may be beneficial to patients who do not improve or in whom the condition progresses.

In view of the frequency of the condition, special attention should be given to prevention of ulnar nerve compression in patients confined to bed for a long time, especially if they must remain supine or are immobilized. A history of paresthesias while reading in bed, sitting in an arm chair, or driving an automobile should be noted. The elbow should be inspected for any abnormality of the carrying angle, for shallowness of the ulnar groove, for tendency of the ulnar nerve to dislocate when the arm is flexed and for any unusual tenderness of the nerve. When any of these conditions is found the patient should be advised of the position of the nerve, to avoid pressure against this region and to report any dysesthesia promptly. Meals should be served over the bed rather than on a bedside table to avoid supporting weight on an elbow.

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Surprises in Operations on the Inguinal Area in Young Children

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• In surgical operations in the inguinal area in infants and children many unusual pathologic states were observed that were at first thought to be simple hernia. Among the conditions observed, in addition to complicated hernias and other anomalies of the processus vaginalis, were male pseudo-hermaphroditism, ectopic spleen, ectopic adrenal with neuroblastoma, diverticulum of the bladder, inguinal adenitis and suppurative iliac adenitis.

In light of the sometimes surprising contents of the hernia sac, good exposure and careful identification of all anatomic structures is mandatory.

PERHAPS the most common operative procedures in infants and young children involve the inguinal area for the repair of hernia, hydrocele and undescended testicle.

Many of the unexpected findings in such operations are peculiar to children. An awareness of the possibility of such surprises is essential to physicians who do inguinal operations in pediatric age groups.

The following instances of unexpected pathologic conditions are drawn from the author's practice and from his experiences and that of other surgeons in a large children's hospital.

"Lumps" in the groin in children are classified in Table 1 for the purpose of differential diagnosis.

TABLE 1.—*"Lumps" in the Groin in Children*

Differential Diagnosis

- CONGENITAL
  - Hernia
    - Indirect
      - Complete
      - Incomplete
    - Sliding
      - Male: cecum, appendix, sigmoid
      - Female: tube, ovary, uterus
    - Littré
    - Pseudo-hermaphrodite
  - Hydrocele
    - Tunica vaginalis
    - Encysted, of the cord (Processus vaginalis)
    - Canal of Nuck
  - Cryptorchidism
    - Unilateral
    - Bilateral
  - Ectopic spleen
  - Ectopic adrenal
  - Diverticulum of the bladder
- ACQUIRED
  - Direct hernia
  - Femoral hernia
  - Richter's hernia
  - Torsion
    - Testicle
    - Appendix testis
    - Ovary
  - Incarceration
- INFLAMMATORY
  - Inguinal adenitis
    - Primary
    - Secondary
      - Cat scratch, etc.
  - Adenitis of Cloquet's node
  - Suppurative iliac adenitis

CONGENITAL "LUMPS"

The first unusual situation involving congenital hernias concerns sliding hernia in the male. The first step is to make the incision longer than that routinely used for exposure. Frequently only a small sliding element is present and the reconstruction of a 360° peritoneal circumference at the internal ring can be accomplished without a counter incision. If the hernia is large and the anatomic features are hard to identify, a La Roque maneuver, such as is used in adults can be used quite satisfactorily. Unless good exposure is accomplished, there is hazard of inadvertent removal of tissue that is not a part of the hernial sac.

Quite common in infant girls is the finding of an ovary, a tube or the uterus sliding into the neck of the hernial sac. Dealing with such a situation can be somewhat perplexing, for considerable bleeding is entailed in dissection of the medial aspect of the sac and the blood supply to the tube and ovary is endangered. Also, since the procedure leaves these structures hanging free within the peritoneal cavity, torsion may occur. A useful technique for reconstruction of the neck of the peritoneal sac is that of Goldstein and Potts,[1] in which the broad ligament, tube and ovary are inverted and the internal ring is closed, leaving the adnexal attachments and avoiding the dissection in the broad ligament.

Submitted March 2, 1962.

The Littré hernia, in which the sac contains Meckel's diverticulum, should be dealt with in the same manner as any hernia in which tissue that ought not be removed is incarcerated in the hernial sac—by careful identification and separation before repair is carried out. If treatment of the diverticulum is necessary, a secondary incision should be made lest the inguinal area become contaminated.

In one case in which an ovary apparently was involved in the material incarcerated in a hernial sac, closer inspection brought doubt as to the identity of the tissue and a pathologist who examined a frozen section diagnosed "testicle." The immediate course in such circumstances is to determine the character of the opposite gonad and the presence or absence of a uterus. If a second testicle is found, and there is no semblance of external male genitalia, both testicles are removed. A biopsy specimen of skin is taken for chromasomal determination of sex. Examination of buccal smears is done later. The male pseudo-hermaphrodite will fare better as an infertile female than as a male without external genitalia.

The rarest of hydroceles is that of the canal of Nuck. It is analogous to the encysted hydrocele of the processus vaginalis of the male. Lesions of this kind may not be discernible by transillumination, for often they are beneath the external oblique fascia. They may be palpable as fixed, firm fusiform, non-tender masses. Deep palpation may show them to be separate from the internal ring, which helps to distinguish them from hernia. For surgical exposure, the same kind of incision that is used for repair of hernia is used.

Cryptorchidism seems to predispose the testicle to torsion, which calls attention to the condition. At the time operation for relief of torsion is done, the opposite undescended testicle may be drawn down and anchored. The twisted testicle is never sacrificed.

The embryologic development of the spleen and the gonad from about the same area near the urogenital ridge explains why accessory spleens are found in the scrotum and along the path of the processus vaginalis. These abnormalities are easily recognized and managed by routine procedure.

Ectopically placed adrenal tissue of the inguinal area is also easily explained as the result of residual remnants of primitive cells developing in the path of the testicle and processus vaginalis.

ACQUIRED "LUMPS"

Although rare, a direct hernia sometimes is observed in an infant or child. In the cases I have dealt with, these lesions caused symptoms and at operation a defect in the floor of the canal medial to the epigastric vessels was noted. Repair is by simple imbrication of the transversalis fascia.

Femoral hernia in infants, also rare, is best managed by a McVay Cooper's ligament repair and anatomic reconstruction of the abdominal wall.

The problems of incarceration include Richter's hernia and differentiation between torsion of the appendix, a testicle or an ovary, and the ruling out of an inflammatory process. While the preoperative diagnosis is frequently correct, usually there can be no certainty without surgical exposure.

INFLAMMATORY LUMPS

The inguinal canal is generally quite free of lymph nodes, but occasionally the node of Cloquet, which is the highest in the femoral area and normally lies behind Poupart's ligament, may be involved in the inguinal canal at or just behind the internal ring. The tumors caused by involvement of this kind are usually deep and painful and are difficult to differentiate from incarcerated hernia or perhaps even from incarcerated interstitial hernia as seen in adults. Involvement of this node at the internal ring has been observed secondary to infantile vaginitis, to pustular diaper rash, to cat scratch disease and to inflammation of the toes.

Although a considerable problem when it does occur suppurative iliac adenitis is rare nowadays. In one such case, inguinal drainage was necessary, then retroperitoneal drainage of a higher abscess four months later, and drainage of a metastatic abscess of the omentum at the flexure six months after that.

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Further Study of Spastic Dysphonia

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• Seven women and two men with spastic dysphonia, ranging in age from 20 to 59 years, were studied to determine the cause and the means of development of the condition. The patients were examined by a laryngologist and, when feasible, by a psychiatrist or other medical specialist for coordination and corroboration of the diagnosis. Psychiatric observations were significant. A background of conflict with a parent or spouse was frequent and typical. In almost every case there were deep guilt feelings associated with something the patient had said to the person with whom he was in conflict. Similarities with the psychic elements in these cases and in cases of stuttering were noted. The results of vocal reeducation and psychotherapy together were comparatively successful. Hypnosis and the use of tranquilizing drugs did not help.

THE LITERATURE dealing with disorders of voice contains little on the problem of spastic dysphonia,[8] although this unusual condition was described at least as early as 1871.[1] Usually the first symptom of this disorder is frequent, uncontrollable, unpredictable hoarseness that sounds as if the vocal cord adductors have suddenly gone into spasm. Except for these episodes the voice remains relatively normal. In some cases the abrupt transition from normal voice to spastic voice is quite dramatic; in other cases the difference is less pronounced because even the "good" voice is impaired. A significant diagnostic clue is, therefore, a voice which periodically changes in quality, either from "good" to "bad" or from "bad" to "worse." These spastic episodes may be momentary or they may last for several minutes.

Some of the few comments in the literature on this condition have been summarized previously.[7] The views of Glushak,[2] Greene,[5] Morrison,[10] and Staton[11] are in general agreement that the condition is not organically based, although these investigators disagree somewhat in their views of the mechanics of the spasm. In addition, several observers[2,3,4,9] have pointed out the symptomatologic similarity between spastic dysphonia and stuttering.

In order to explore further the cause, the onset and the clinical manifesations of spastic dysphonia, as well as the appropriate therapy, additional cases have been studied in detail.

Procedure

Nine adults with spastic dysphonia (seven women, two men) ranging in age from 20 to 59 years, with a median age of 34 years, were observed by the author during the period 1957-60. The patients were examined by a laryngologist, and, when feasible, by a psychiatrist or psychologist or other medical specialist for a coordination and corroboration of the diagnosis. Emotional factors preceding the onset were explored thoroughly. When the clinicians involved were in agreement that the symptoms should be categorized as spastic dysphonia, a regimen of therapy, somewhat different from patient to patient, was attempted.

Results

Two illustrative cases were described in a preliminary publication.[7] In addition, the following case summaries are presented to show the similarities encountered.

CASE 1. A married woman, 20 years of age, was referred by an instructor from whom she had recently taken a course in public speaking. During the initial interview, the student reported that her voice was sometimes good and sometimes bad, and that onset of the difficulty had been some four years before. She could not recall that the onset had been related to any particular event. Ultimately the following facts were obtained: At the time of the initial consultation regarding the voice problem, the patient was being treated by a gynecologist for dyspareunia which made coitus difficult, painful and at times impossible. She also had severe menorrhalgia. Further interviewing revealed that at age 15 the girl had dated a boy of whom she had become very fond. This relationship progressed to the point of coitus which was not culminated because of her sudden fear. She told the boy that she could not carry on, that the nature of their relationship must change. This pronouncement resulted in a cessation of the relationship completely, for the consequences of which the patient later expressed regret. She met her present husband shortly after that experience and eventually married him. She later remembered that the onset of spastic dysphonia coincided with this period of breaking with the one boy friend and meeting the other. It was the

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Submitted February 13, 1962.

opinion of the gynecologist, the speech pathologist and the psychiatrist who saw the patient that the spastic dysphonia and dyspareunia were related in that the psychological mechanisms could have been the result of the patient's having *said* something which, she felt, changed the course of her life (she expressed regret at having married the second boy rather than the first whom she could have married had she not said certain things at a critical point in their relationship). Because the trauma involved both speech and sexual relations, the psychological punishment involved both areas. Eventually the patient acepted this diagnosis and through a combined therapy program consisting of counseling, voice retraining and medication positive results were obtained. Voice returned to normal and sexual relations were resumed without pain.

Case 2. A 47-year-old widow consulted the author because of intermittent hoarseness of five years' duration. Six years before the interview the patient had insisted that her husband go to a physician for a general physical examination. At first he resisted this invitation but after a long verbal battle he consented. A malignant lesion was diagnosed which several months later caused the husband's death. The widow returned to college, obtained a teaching credential and began teaching in order to finance her son's education. She overtly disliked teaching. In a few months, aberrations of voice were noticed. Psychiatric consultation corrobated the opinion that the mechanism at work was one of self-punishment: the patient was placed in a position of having to use her voice professionally in a role that perhaps would not have been necessary if she had not previously used this same voice to insist upon her husband's medical examination. Voice therapy with the patient under hypnosis did not help and the patient did not return after the sixth session.

Other representative cases are presented in less detail to illustrate further significant areas of concern:

Case 3. A 25-year-old man who had stuttered as a child had a cessation of stuttering sometime during high school. Dysphonia then appeared almost immediately. Upon examination the voice was heard to be essentially normal in quality except for intermittent hoarseness accompanied by lip tremors. The patient did not return for therapy after the initial interview.

Case 4. A woman 59 years of age had hoarseness typical of spastic dysphonia. Periodically a tremor-like quality would develop in addition to the hoarseness. Significant in the history was the fact that five years before she sought advice about her voice the patient discovered her husband dead in his bedroom as a result of coronary artery disease. She reportedly "went all to pieces" upon making this discovery and simply sat on the edge of the bed in a stupor. Even though she was repeatedly assured by her husband's cardiologist that no action at the time could have prevented his death, she continued to express guilt in not having called an ambulance or physician immediately. Four years after her husband's death, her mother died after a long illness. The patient admitted that she had never loved her mother, had spoken harshly to her throughout the illness, and after the mother's death felt guilty for having done so. Vocal symptoms began soon after the mother's funeral. The voice eventually returned to normal after a regimen of psychologic counseling coupled with voice retraining.

Case 5. The patient was a 23-year-old woman who had worked as a telephone operator in a small town for several years after graduating from high school, then, encouraged by her success in that position, had transferred to the telephone office in a larger metropolitan area. Her reaction to the change was one of almost immediate regret and unhappiness, but she felt that she could not return to her small town and admit failure. A few months after the transfer her voice began intermittently to drop suddenly in pitch and assume a very hoarse quality. This voice disorder necessitated her transferring from the telephone office to another job which she disliked. Voice retraining along with minimal psychological counseling returned the voice almost to normal, but with occasional reversions under stress.

Case 6. A woman of 35 years had graduated from college with a degree in music. Before she had an opportunity to sing professionally, she married and began having a family. After her children were school age, she became active in local singing groups, devoting more and more of her time to singing activities and less and less time to her family. Her husband openly resented this encroachment on family time. Symptoms of spastic dysphonia began shortly after the husband began voicing his objections, thereby forcing the patient to abandon her musical pursuits. Short term, intensive (daily) voice retraining, along with prolonged marital counseling, achieved satisfactory results.

Case 7. A woman 44 years of age was observed because of "voice tremor" of eight months' duration. Although the acoustic effect was typical of spastic dysphonia, the patient would not contribute any information regarding her history (except in innocuous detail) and would not accept furthur referral. Voice retraining alone, and later under hypnosis, did not yield satisfactory results.

DISCUSSION

In none of the foregoing cases did laryngological examination show evidence of an organic cause. Frequently edema of the vocal cords was noted, but according to the examining laryngologists, it was the result rather than the cause of the vocal symptoms. Furthermore, although the history was more dramatic in some cases than in others, there seemed to be a common thread running through most of them—frequently a history of guilt resulting from something the patient had said or failed to say, or guilt resulting from the use of the voice.

It has been observed that patients with spastic dysphonia typically have an increase in difficulty when speaking over the telephone, when speaking to strangers and when speaking to authority figures, and less difficulty when speaking to small children or pets or when reading in unison with others. The similarity in this respect between the symptoms of spastic dysphonia and those of stuttering, as has been pointed out by other observers,[2,3,4,9] cannot be lightly overlooked.

In terms of therapy, various approaches were attempted with the above patients. Therapy under hypnosis did not help in either of the two cases in which it was used. In one case tranquilizing drugs were prescribed on an experimental basis by the physician but without success. Voice retraining alone was not satisfactory. The only satisfactory results obtained in any case came when adjustment counseling, either psychiatric or psychologic, was used along with voice therapy, thus pointing further to the psychogenic basis of the disorder. This observation is consistent with similar ones by Arnold[1] and Heaver.[6]

The successful regimen of voice therapy made use of Froeschel's "chewing method"[13] for vocal relaxation and ease of initiation of phonation. Furthermore, faulty breathing patterns such as antagonistic or too shallow breathing were noted in most of the cases herein reported. Faulty patterns were reported previously by Supácek and Lacina[12] and are apparently a frequent concomitant of spastic dysphonia. Voice therapy, therefore, required re-education of breathing patterns along with vocal relaxation, ease in initiation of phonation, and psychological support to coordinate the efforts of the several clinicians involved in each case.

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CASE REPORTS

Rupture of Abdominal Aortic Aneurysms Complicated by Acute Renal Failure And Aspergillosis

H. VERNON FREIDELL, M.D., and
WILLIAM F. GEBHART, M.D., Santa Barbara

THE RECENT OCCURRENCE of two cases of rupture of an abdominal aortic aneurysm, successfully resected, followed by acute renal failure with survival prompted a review of this combination. The occurrence of aspergillosis causing anuria by ureteral obstruction in one of the cases is documented.

Cottage Hospital is a general hospital with 237 beds. In the five-year period from 1957 through 1961, there were 44,748 admissions which included nine cases of ruptured abdominal aortic aneurysm. The average age of the patients with this lesion was 66 years. All were males and the symptoms of the rupture had been present for an average of 22 hours. In those who died without operation, death occurred within 16 hours of admission. Four of the nine patients were operated upon and two survived.

Following are reports of the cases of the two who lived.

CASE 1. A 79-year-old white man was admitted to the Cottage Hospital emergency room April 5, 1961, with chief complaint of cramping in the left lower quadrant of the abdomen for one week. On examination blood pressure was 200/112 mm. of mercury and the pulse rate was 80. There was a grade 2 murmur of aortic stenosis. A rounded mass about three inches in diameter, with a "transmitted pulsation," was palpated in the left lower quadrant of the abdomen. Ninety minutes after admission the patient suddenly developed profound shock while in the x-ray department. In a kidney-ureter-bladder film a large aneurysm with calcification in the wall was visualized. At operation a large retroperitoneal hematoma was noted, with rupture of the abdominal aneurysm, which extended from the level of the renal veins superiorly to the inguinal ligament inferiorly. A Teflon® Y tube was used to replace the diseased segment of aorta, the aorta having been clamped below the renal arteries for a period of 3 hours and 15 minutes while the procedure was carried out. During the surgical procedure the patient received 15 units of whole blood.

The patient was oliguric from the time of arrival in the intensive care unit. The urine had a specific gravity of 1.005 and showed 1 plus albumin and numerous granular casts. Oliguria continued (50-60 cc. of urine daily) for a total of six days. During that time appropriate intravenous therapy, rigid fluid restriction, general supportive measures and administration of potassium ion exchange resins were carried out. Although the nonprotein nitrogen rose to 132 mg. per 100 cc. and mild metabolic acidosis developed, the patient's general condition did not deteriorate to the point of requiring extracorporeal hemodialysis.

On the sixth postoperative day urine volume began to increase (350 cc. in 24 hours) and by the tenth postoperative day the patient was well into the diuretic phase of acute tubular necrosis. Twenty-five days later the non-protein nitrogen was 46 mg. per 100 cc. and other chemical components of the blood were within normal limits. A moderately heavy growth of E. coli developed on a culture of the urine, but after therapy with AzoGantrisin®* and Mandelamine (methanamine mandelate) the urine culture was sterile.

CASE 2. The patient, a 65-year-old white man, was admitted to the Santa Barbara Cottage Hospital at 6 a.m. September 17, 1961. He was known to have had essential hypertension since 1954. Recent treatment had included Rauwiloid® (alseroxylin), 2 mg. twice a day; Inversine® (mecamylamine), 2.5 mg. each evening; and Diuril® (chlorothiazide), 500 mg. each morning. The morning of admission the patient had pain of sudden onset in the left upper quadrant of the abdomen with radiation to the flank area, the left lower quadrant and the left groin, accompanied by nausea without vomiting.

The patient was pale and perspiring. The blood pressure was 180/110 mm. of mercury and pulse rate 80. A firm mass with transmitted pulsation was palpable in the left lower quadrant of the abdomen. Pulsations were present in the lower extremities at this time.

At operation, done under hypothermia at 31° C., an aneurysm of the aorta, 15 cm. x 10 cm., was found to be ruptured. The aneurysm extended to

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Submitted March 2, 1962.

From the Santa Barbara Cottage Hospital, Santa Barbara.

*Sulfasoxazole with phenylazo-diamino-pyridine hydrochloride.

within 0.5 cm. of the renal arteries, necessitating clamping of the aorta above the origin of the renal arteries. During the procedure, which took seven and a half hours, the aorta was clamped for two hours and thirteen minutes, and the patient received 13 units of whole blood. Because of the involvement of the left renal artery and vein, it was necessary to remove the left kidney (the pathologist reported it arteriosclerotic).

The patient was oliguric on his return to the intensive care unit. A "radioactive renogram" was done on the right side to ascertain whether the oliguria was due to right renal artery occlusion with infarction of the kidney, or due to tubular necrosis. A normal "vascular spike" was obtained, confirming the diagnosis of tubular necrosis.

Azotemia and hyperpotassemia progressed rapidly during the early phase of oliguria, and the patient's general clinical status deteriorated. On the fourth day extracorporeal hemodialysis was carried out with a Travenol® twin coil kidney for a period of six hours, and his clinical condition then greatly improved. In spite of conservative medical management with appropriate fluid restriction and ion exchange resins for control of serum potassium levels, acidosis, azotemia, and hyperpotassemia increased and, on the tenth day of renal shut-down, extracorporeal hemodialysis again was carried out for six hours. Appropriate medical management was continued, and by the sixteenth postoperative day urine output had increased to 620 cc. in 24 hours.

From the seventeenth postoperative day the patient entered the diuretic phase. Adequate fluid and electrolyte replacement was maintained and the clinical condition of the patient improved as azotemia diminished. Because of complicating tracheobronchial and lower urinary tract infections occurring within three weeks of operation, the patient received chloramphenicol for five days, terramycin for five days, and streptomycin every other day for five injections.

Approximately a month after the second dialysis the patient suddenly became anuric. Urological consultation was obtained, and at cystoscopic examination a large 0.75 cm. x 0.5 cm. plug of "whitish tissue" was noted to be occluding the lower right ureter. It was removed and a retrograde pyelogram then revealed no evidence of abnormality. Urine volume immediately increased, and the patient's general clinical condition progressed satisfactorily. By microscopic analysis and bacteriologic study the plug of material removed at cystoscopy was found to be Aspergillus fumigatus.

DISCUSSION

Rupture of the lesion is one of the more frequent causes of death in patients with arteriosclerotic abdominal aneurysm.[20,30] It has been calculated that 2,450 people die of it each year in the United States.[5]

There is usually a period of hours to days between rupture and death. Owing to the retroperitoneal position of the aorta, the initial blood loss from the vessel is usually confined by the peritoneal surface, and it is not until the peritoneum ruptures that death occurs.[8] Before aortic resection and graft replacement was surgically feasible, rupture of the aneurysm was fatal. Now, with operation, 50 to 60 per cent of patients survive.[13,15]

Acute renal failure is a frequent and often fatal complication of operation on the aorta, causing death in 10 to 60 per cent of reported series. The exact pathogenesis of renal failure is not known, but some of the factors are atherosclerosis, shock, transfusions, hydration of patients, reflex renal vasospasm, and the location and duration of aortic cross-clamping.* It is becoming apparent that the more important features are reflex renal vasospasm and renal ischemia from cross-clamping.

How long the flow of blood to the kidneys can be occluded without producing irreversible ischemic changes in them is not known. It was shown in animals that when both the suprarenal aorta and renal arteries were clamped for from two to three hours, severe renal damage resulted. When only the suprarenal aorta was occluded for the same period of time much less damage occurred, suggesting a collateral flow through the renal capsule.[23,24] It has been found in patients with normal kidneys that occlusion of the suprarenal aorta for periods greater than 30 to 40 minutes may result in renal failure, whereas infrarenal aortic occlusion of 1 to 2 hours may be tolerated safely. Hypothermia does not per se produce any residual damage to the kidneys: it lowers tissue metabolism to a point at which renal ischemia for a prolonged period may not result in irreversible renal damage. Hypothermia to 27° C. doubled the period for which arterial occlusion could be maintained without severe renal damage. It results in decrease of blood pressure with reduced glomerular filtration fraction, but without the associated decreased urinary volume or significant decrease in sodium excretion that usually occurs in normothermic conditions following any procedure that reduces glomerular filtration rate.[21] As delivery of oxygen depends not only on the flow of blood but also on the state of the vascular bed in the kidneys, the addition of ganglionic blockade by operation or by sympatholytic drugs helps prevent renal vasospasm, increase vascular resistance and reduce the severity of renal damage.[22,24,29,31]

It has been suggested that administration of Mannitol® (a hexahydric alcohol) is a safe effective way of preventing acute functional renal failure.[4] It is a small particle that is slow to equalize with the extravascular compartments after an intravenous infusion. As it is filtered at the renal glomerulus and non-reabsorbable from the tubular lumen, it results in osmotic diuresis. The method used by Barry and coworkers[4] was to infuse it as a 20 per cent solution at a rate of 5.5 cc. per minute during aneurysmectomy until the free flow of blood was reestablished. If, after operation, the urine excretion fell to below 60 cc. per hour for two successive hours, booster doses of 12.5 gm. of Mannitol® were given intravenously over a three-minute period and thereafter the agent was added to each bottle of intravenous fluid as needed to maintain a urinary flow of 60 to 120 cc. per hour.

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*References Nos. 2, 10, 12, 14, 16, 18, 22, 27, 31.

Severe oliguria is usually preceded by a depression of the renal blood flow and glomerular filtration rate. Clinical studies[3] showed that Mannitol infusions increase the renal blood flow, the glomerular filtration rate and the urinary flow. It was also observed that the rate of urinary flow varies directly with the renal blood flow and the glomerular filtration rate. The plasma expansion resulting from use of Mannitol® is determined by the total quantity of the agent infused. the rate of infusion, and the rate at which it leaves the vascular compartments.[3] In an oliguric patient the recommended test dose of 12.5 gm. of Mannitol® is given in a three-minute interval. If a satisfactory response is obtained, 30 cc. per hour during the ensuing three hours is infused. Thereafter enough Mannitol is used to maintain a urinary flow of 60 to 120 cc. per hour until the danger of renal failure has passed.

The severity of renal failure following aortic operations is variable, as was shown in Cases 1 and 2 reported herein. In Case 2 the renogram permitted differentiation between renal artery occlusion and acute tubular necrosis in the remaining kidney as the cause of the anuria. The renogram showed an adequate initial vascular spike representing renal vascular capacity that would have been absent had the renal artery been occluded.[1,32]

Anuria occurring during the diuretic phase secondary to ureteral blockage by a ball of Aspergillus fumigatus has not been described in the literature before. The presence of balls of Candida albicans in the bladder has been reported and there is one report of Candida blocking a ureter in a case of disseminated fungous disease.[6,11,28] Aspergillus, a mold, is a frequent laboratory contaminant and not a common pathogen of man. The manifestations are protean and depend on the organ involved. Lungs, skin, eyes, ears, bronchi, nails, bone and meninges have all been involved.[9,17,19,25,26] Aspergillosis usually occurs in patients who are chronically ill and who have received antibiotics and steroids. These agents alter or suppress the resistance to Aspergillus fumigatus and allow it to become clinically important. In Case 2 the patient had received chloramphenicol, terramycin and streptomycin. The finding of this ball of Aspergillus fumigatus was the only indication of this condition present in this patient, and whether or not parenchymal damage secondary to this fungus may appear in the future is not clear at this time. At present there is no indication of clinically significant aspergillosis.

SUMMARY

Two patients who had rupture of an abdominal aortic aneurysm and then acute renal failure following aortic resection have been reported. One patient, after having the infrarenal aorta clamped for 3 hours and 15 minutes, had clinical uremia which responded to conservative management. In the other patient the operation was performed under hypothermia of 31° C. and the suprarenal aorta was clamped for 2 hours and 13 minutes. One kidney was removed and tubular necrosis developed in the other. In the diuretic phase the patient had ureteral obstruction caused by a ball of Aspergillus fumigatus. The decision to treat this patient as having acute tubular necrosis rather than renal artery occlusion following the aortic operation was based on information supplied by a renogram with radioactive material.

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EDITORIAL

The Next Step

Presidential hopes for enactment of the King-Anderson Bill were sent into a tailspin last month when the Senate, by a 52 to 48 vote, adopted a motion to table a proposal to tack this measure onto an otherwise acceptable welfare bill.

Obviously many physicians took comfort from the fact that for all practical purposes the issue of King-Anderson is dead for the remainder of 1962. So many doctors had followed the progress of the campaign that in its terminal period there was great satisfaction in the rallying of allied forces and the decline of administrative optimism.

There remain two unfortunate aspects of this proposal, both of which must be faced and dealt with. First is the fact that medical care for the aged has been turned into a political football. Second is the fact that King-Anderson proposals will be reintroduced in the early days of 1963.

Coping with the business of political blandishments to the aged will be extremely difficult. The politician with an axe to grind and with easy access to all media of communication can build an attractive proposal which is bound to appeal to a considerable proportion of the 17 million voters of 65 years or older. Through such a proposal he can promise immediate benefits to this large group and future benefits to those less elderly.

Many incumbent members of Congress will use this approach to the voters in the November election. Likewise, many aspirants for Congressional seats will use the care-for-the-aged approach in opposition to incumbents who were on record as opponents of the social philosophy of the measure.

Thus in 52 instances, Senators who voted to table the Senate bill will be haunted in their campaigns for reelection, either this year or two or four years hence.

Members of the House of Representatives, who were spared the roll call vote, will not have the same problems of reelection as the Senators, with the exception of a few outspoken opponents of King-Anderson legislation who placed their philosophies squarely before their constituents. Most members of the lower house were content to walk a narrow line and were doubtless happy that the issue was settled in the Senate.

If the presidential statements relative to making legislation of the King-Anderson type the prime campaign issue in November are carried out, we can expect any legislator who opposed this measure to be charged with favoring neglect of care for the aged.

As to the second residue, the fact that similar legislation will be introduced in the new Congress next January, much more of a constructive nature is possible.

In the first place, the medical profession and its allies have gained five months of time. During this period, further progress will be made in implementing the Kerr-Mills legislation already on the statute books. Time is gained for further consideration of implementing legislation in those states which have not already acted in this direction. Time is gained for improving implementing legislation in those states where such legislation exists but may need amending.

It is noteworthy that the California delegation to the American Medical Association introduced a resolution in June calling for (a) reaffirmation of support of Kerr-Mills, (b) prompt consideration of implementing legislation in those states which have not yet acted in this direction, and (c) amendments to legislation in those states where such amendments may be indicated on the basis of experience. Where state legislation to implement federal grants is required promptly, it is unavoidable that the programs adopted by the various states will be of wide variety and that some of the programs, enacted on an empirical basis, will need revision. Where changes are indicated by experience, they should be made.

In similar fashion, the five months gained at this time will permit the Blue Shield plans and other voluntary programs to expand their services and to provide over-65 coverage for the growing number of citizens in this age bracket.

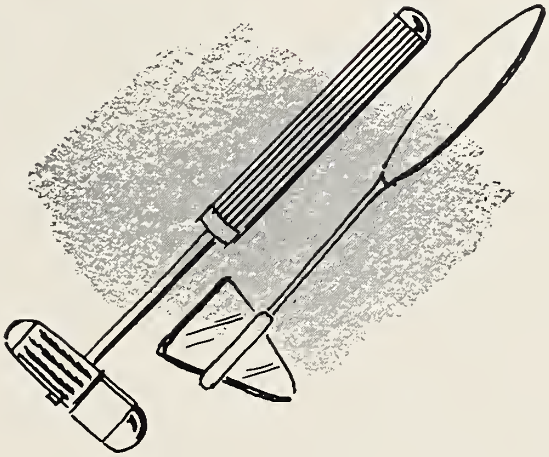
Already several large insurance carriers have produced contracts designed to ease the financial burden of illness for persons over 65. As time goes on and experience accumulates, it is only reasonable to assume that better coverage will be offered. California Physicians' Service, one of the Blue Shield plans which has experimented in this field, has already come out with advanced coverage. Others are bound to follow. When they do, experience teaches that the public is better served through competition. The laggard in the competitive race for coverage of more people is the loser. The carriers willing to risk a little more, within the bounds of sound business, will be the gainers.

With an expansion in the coverage provided by all carriers there will come a diminution of the need and demand for governmental intervention. Government has no place in the underwriting of insurance unless and until private resources are proved to be inadequate or inappropriate.

The medical profession and its allies have fought a successful battle this year. However, the war still goes on and the profession must keep on fighting. While the fight so far has been characterized by King-Anderson proponents as directed against a plan for paying for hospital care out of the Social Security fund, the implications of this type of legislation are much deeper. In essence, this is a fight against the perversion of a welfare program into the delivery of services, rather than dollars. If hospital services are to be provided at the outset, medical services would surely follow. From that point on, any number of services might be added, for an end result that would place a large group of elderly citizens completely under the domination of the government. At the same time, all purveyors of services would be burdened with the same yoke.

Fortunately, a few months have been gained right now for the production of something better. Right now there is time to work on and for the development of programs under the voluntary method which will be superior to government programs and thus negate their need.

Physicians who have fought the fight so far must be encouraged to continue fighting. The little success we have had this summer in the Senate cannot for a moment be looked upon as a victory, but it has shown us that we need not be without hope. We have found out that when we are right about what is wrong, we have surprising strength if we will use it. Use it now we must.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Transactions of the House of Delegates

San Francisco, April 14 to 18, 1962

> *Note: The following report of the transactions of the House of Delegates of the California Medical Association is selected and abridged. A complete transcript of all proceedings is on file in the Association office in San Francisco and available for the inspection of all members.*

REFERENCE COMMITTEES

Committees appointed by Speaker James C. Doyle at the first meeting of the House of Delegates Saturday evening, April 14, were as follows:

Committee on Credentials: John Galgiani, San Francisco, chairman. (In order to speed up registration two boards were appointed, one board to deal with registration of the county delegations starting with "A" through "L," the other starting with "M" and going through "Z" and also dealing with registration of the Past Presidents and Councilors.)

A through L Board: Robert L. Blackmun, Los Angeles; Robert M. Dorn, Beverly Hills; Horace F. Sharrocks, Sebastopol; David J. New, Modesto; Chester Tancredi, San Diego; Allen C. Mitchell, Monterey.

The M through Z Board: John V. Pollack, Los Angeles; Charlotte C. Baer, San Francisco; William T. Bender, San Francisco; Forrest M. Willett, San Francisco; Edward J. Twigg, Alameda; Sidney P. Mitchell, Santa Clara.

Reference Committee 1. (This committee reviews the reports of the officers, the Council, the commissions, and standing and special committees.) James Yant, Sacramento, chairman; George Herzog, San Francisco; Dudley Cobb, Jr., Los Angeles; Donald Abbott, Riverside, alternate.

Reference Committee 2. (This committee on finance reviews the reports of the secretary and executive secretary and studies and makes recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year.) James J. Benn, Jr., Ripon, chairman; Stanley Truman, Oakland; Ian Mac-

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donald, Los Angeles; Walter Carpenter, San Diego, alternate.

Reference Committee 3. (This committee considers new and miscellaneous business.) Don C. Musser, San Francisco, chairman; Charles Grayson, Sacramento; Harold B. Miles, Santa Barbara; Harold Kay, Oakland, alternate.

Reference Committee 3A. (To consider business of Committee 3 when the volume becomes too great for one committee to handle.) James W. Moore, Ventura, chairman; William Argo, Fresno; Malcolm Watts, San Francisco; George Buehler, Whittier, alternate.

Reference Committee 3B. (This committee also is a supplement to 3 and 3A.) James A. Spencer, Watsonville, chairman; Roger C. Isenhour, San Diego; Clyde Boice, Palo Alto; Donald R. Fitch, Glendale, alternate.

Reference Committee 4. (This committee considers amendments to the Constitution and Bylaws.) Frank C. Melone, Ontario, chairman; Walter H. Brignoli, St. Helena; Luther Newhall, Santa Cruz; Thomas E. Hanigan, Santa Ana, alternate.

Reference Committee on California Physicians' Service. Seymour Strongin, Bakersfield, chairman; William J. Newman, Sonoma; Henry Brown, San Mateo; Samuel Gendel, Anaheim.

PRESENTATION OF FIFTY-YEAR AWARDS

Pins commemorative of 50 years of membership in the California Medical Association have been presented to the following physicians:

John Lowe, Alameda-Contra Costa County
Clarence S. Compton, Kern County
L. D. Hollingsworth, Orange County
Harry O. Hund, Marin County.

* * *

STUDENT A.M.A. REPRESENTATIVES

The representatives from California medical schools to the Student American Medical Association were introduced:

From the University of California, San Francisco: Carew Farrity, Robert Rock, and Robert Lumsden.

From Loma Linda University School of Medicine: John Hodgkin and Phil Lindsey.

From the University of Southern California School of Medicine, Los Angeles: Harold Triplett and Sam Balbum.

* * *

WOMAN'S AUXILIARY

Mrs. Lawrence Custer, president of the Woman's Auxiliary, reported on the activities in her year of tenure.

ACTION ON RESOLUTIONS

The 1962 C.M.A. House of Delegates took action on 91 resolutions in its regular session and approved one emergency resolution.

Shown below are all resolutions, in numerical order, with a note on the action taken on each. The subject of each resolution and the author are also shown.

In several instances, reference committees considered two or more resolutions as a group and took one action affecting all resolutions in the group. Where such action was taken, reference is made on the first-numbered resolution of the group and following resolutions are referred back to the earliest numbered.

Where resolutions were not favorably acted on, the language of the resolution is not shown but the subject matter, the author and the disposition are shown.

* * *

PENSIONS FOR SELF-EMPLOYED INDIVIDUALS

Resolution No. 1.

Author: L. P. Armanino.

Representing: San Joaquin Medical Society.

Whereas, self-employed individuals are presently denied certain income tax benefits for retirement plans that are granted to employees and officers covered by corporate pension plans; and

Whereas, efforts to obtain these benefits through federal statute such as H.R. 10, known as the Keogh Bill, appear to have little likelihood of success; and

Whereas, it is the considered opinion of experienced tax attorneys that such benefits cannot lawfully be obtained in California by professional associations or partnerships under existing California statutes and regulations of the Internal Revenue Service; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association endorse the efforts of the Commission on Professional Welfare and the representatives of other professions in drafting and supporting appropriate enabling state legislation to authorize the formation of professional corporations; and be it further

Resolved: That nothing in such incorporation procedure should affect or impair the professional relationship between the patient and the physician or change the laws, rules and regulations pertaining to the practice of medicine by licensed persons, the standards for professional conduct or disciplinary and regulatory power of the Board of Medical Examiners and other established professional groups.

ACTION: Referred to Council, together with Resolutions Nos. 5, 19, 45 and 62.

APPROVAL OF A.M.A. SUBCOMMITTEE REPORT "MEDICAL CARE FOR EYE PATIENTS"

Resolution No. 2.

Author: James A. Spencer.

Representing: Santa Cruz Medical Society.

Whereas, California ophthalmologists and members of the California Medical Eye Council and the C.M.A. hereby affirm the important fact that the A.M.A. House of Delegates adopted, in June of 1961, the report of its subcommittee clearly defining the relation of medicine to optometry; and

Whereas, these definitions of eye care have long been needed, not only by ophthalmology but by American medicine generally, to clear up the confusion which still exists in the public mind as to the distinction between medical eye care and optometric services; and

Whereas, there has long been an increasing tendency for optometry, functioning independently on the periphery of medicine, to extend its scope of activities and to assume functions which should be exclusive to the physician, namely diagnosis and even treatment of eye conditions; and

Whereas, (A.M.A. report quotes) "diseases leading to blindness may be present without symptoms (and) have often escaped detection for lack of medical examinations" (so that) "anything less than a medical . . . eye . . . examination may jeopardize not only the patient's vision but his general health and even his life; now, therefore, be it

Resolved: That this House of Delegates voice its approval of the above-mentioned A.M.A. Subcommittee Report on Relation of Medicine to Optometry; and be it further

Resolved: That it be reaffirmed (as quoted by the A.M.A. subcommittee) that "the public interest requires that physicians (and the public) understand the extent to which optometry's position and practices conflict with medical principles"; and be it further

Resolved: That medicine recognize that there can be no justification for considering as adequate the management of ocular disease by anyone with less training than that of the physician.

ACTION: Adopted by House.

* * *

INDUSTRIAL ACCIDENT COMMISSION FEES

Resolution No. 3.

Author: Horace Sharrocks.

Representing: Sonoma County Medical Society.

Whereas, there is an official minimum medical fee schedule, for services rendered under the California Workmen's Compensation Laws, as adopted by the Industrial Accident Commission of the State of California in 1954 and amended in 1957 and 1959; and

WHEREAS, this schedule does not reflect changes in the practice of medicine and the development of new procedures and phases of medical practice; and

WHEREAS, the 1960 Relative Value Studies as adopted by the California Medical Association Council does reflect these changes; now, therefore, be it

Resolved: That the California Medical Association through its appropriate committee, recommend to the Industrial Accident Commission of the State of California the adoption of this Relative Value Studies with a minimum unit value of five dollars.

ACTION: Referred to Committee on Fees.

* * *

CENSURE OF A.C.S. SPOKESMAN

Resolution No. 4.

Author: Robert B. Smalley.

Representing: Mendocino-Lake County.

ACTION: Not adopted by House.

* * *

CORPORATE PRACTICE OF MEDICINE

Resolution No. 5.

Author: Roger C. Isenhour.

Representing: San Diego County Medical Society.

WHEREAS, there has been a steadily increasing number of physicians who have associated in the practice of medicine with an enormous increase in business complexities; and

WHEREAS, the incidents of corporate form of business are frequently fundamental in a sound business organization and are necessary to promote the normal course of persons associated together in business, and

WHEREAS, it is fundamental that physicians should not be discriminated against in their choice of business entity as long as the personal doctor-patient relationship is not endangered; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association endorse the efforts of the Commission on Professional Welfare and the representatives of other professions in drafting and supporting appropriate enabling state legislation to authorize the formation of professional corporations; and be it further

Resolved: That nothing in such incorporation procedure should affect or impair the professional relationship between the patient and the physician or change the laws, rules and regulations pertaining to the standards for professional conduct or disciplinary and regulatory power of the Board of Medical Examiners and other established professional groups.

ACTION: Referred to Council; see Resolution No. 1.

* * *

CORPORATE PRACTICE OF MEDICINE

Resolution No. 6.

Author: William F. Quinn.

Representing: Los Angeles County.

WHEREAS, the Jenkins-Keogh philosophy of equality in taxation has been recognized as being fair and equitable; and

WHEREAS, in spite of the fact that the members of Congress have agreed that this is fair and in order, they have persisted in postponing this legislation; and

WHEREAS, if an example could be set by enacting legislation of this sort at the state level, it might have a salutary influence in Congress; now, therefore, be it

Resolved: That this House of Delegates hereby instruct its Council to implement this approach by appropriate legislation endeavors at the state level so that, at least as far as the state income tax is concerned, the self-employed individual will be treated comparably with the individual employed by a corporation, namely, that he not pay taxes on funds set aside for his retirement until he actually receives these funds.

ACTION: Adopted by House.

* * *

MEDICAL FEES UNDER THE CALIFORNIA WORKMEN'S COMPENSATION LAWS

Resolution No. 7.

Author: E. Nelson Moore.

Representing: San Benito County Medical Society.

WHEREAS, there is an official minimum medical fee schedule for services rendered under the California Workmen's Compensation Laws, as adopted by the Industrial Accident Commission of the State of California in 1954 and amended in 1957 and 1959; and

WHEREAS, this schedule does not reflect changes in the practice of medicine and the development of new procedures and phases of medical practice; and

WHEREAS, the 1960 Relative Value Studies as adopted by the California Medical Association Council does reflect these changes; now, therefore, be it

Resolved: That the California Medical Association through its appropriate committee, recommend to the Industrial Accident Commission of the State of California the adoption of this Relative Value Studies with a minimum unit value of five dollars.

ACTION: Referred to Committee on Fees.

PRIVATE PRACTICE DEFINITION

Resolution No. 8.

Author: Tenth District.

ACTION: Withdrawn by author.

* * *

DRIVER LICENSE REGULATIONS

Resolution No. 9.

Author: Tenth District.

WHEREAS, the incidence of injuries and deaths from automobile accidents in California is steadily rising; and

WHEREAS, the number of vehicles on California's highways is increasing; and

WHEREAS, the present procedures for driver licensing are inadequate to the degree they do not provide for adequate medical evaluation and screening of new and renewal driver license applicants; now, therefore, be it

Resolved: That the California Medical Association urge the enactment of legislation designed to provide adequate medical evaluation for new and renewal applicants for drivers' licenses; and be it further

Resolved: That the C.M.A. Commission on Community Health Services function in an advisory capacity to the legislature during its considerations of the nature and frequency of medical evaluation required and of the medical conditions for which a driver's license should be restricted or denied.

ACTION: Referred to Committee on Traffic Safety.

* * *

STATEWIDE FLUORIDATION CAMPAIGN

Resolution No. 10.

Author: Tenth District.

WHEREAS, the scientific world has almost unanimously recognized the adjustment of the fluoride level of water supplies to the optimum concentration considered to best combat tooth decay to be a safe, beneficial, practical, inexpensive health measure; and

WHEREAS, isolated and sporadic community and district efforts to implement this measure have, for the most part, been thwarted by a state and nationwide organized effort, much to the detriment of the dental and general health of the population; and

WHEREAS, a sizable portion of the population of this country will need to take this nutrient individually; and

WHEREAS, many organizations and individuals stand ready to unite with medicine in a drive to implement fluoridation measures; now, therefore, be it

Resolved: That the California Medical Association initiate early action to create in cooperation with all other interested groups such as the California Dental Association, an organization to promote an all-out informative statewide fluoridation campaign vigorously pursued in all media on state and local levels with the objective of stimulating local governments to press the proper fluoridation legislation during a single period selected so that organized opposition will be unable to concentrate its efforts as it has in sporadic and isolated instances; and be it further

Resolved: That this campaign inform physicians and dentists practicing in areas lacking community water supplies of the benefits of prescribing this nutrient for their individual patients.

ACTION: Referred to Council.

* * *

RELEASE OF PENSION PLAN FUNDS FOR MEDICAL BENEFITS

Resolution No. 11.

Author: San Mateo delegation.

WHEREAS, those persons now receiving retirement benefits from pension, profit sharing, or stock bonus plans are prohibited by law from receiving payment of benefits for sickness, accident, hospitalization and medical expenses for themselves or members of their families; and

WHEREAS, these various plans now have an accumulated value of approximately $40,000,000,000; and

WHEREAS, the provision of such benefits to these persons will make adequate medical services more available to a significant and increasing proportion of the nation's retired, who have earned this privilege; now, therefore, be it

Resolved: That the California Medical Association, through its members, actively support HR 10117 which seeks to amend the Internal Revenue Code to legalize the provisions of such benefits.

ACTION: Adopted by House.

* * *

TAX DEDUCTIONS

Resolution No. 12.

Author: San Mateo delegation.

(Resolution No. 12 was considered together with Resolution No. 31 and the following substitute resolution was developed in the place of the original resolutions.)

Resolved: That the California Medical Association support state and federal legislation which will eliminate the ceiling on the total allowable deduction for medical expenses and which will also remove the percentage limits of adjusted gross income allowed for such expenses, making the entire amount deductible. including the whole of all health insurance premiums; and be it further

Resolved: That the Council of the C.M.A. take appropriate steps on a state and national level to effect these resolutions.

ACTION: Adopted by House.

* * *

COORDINATED MEDICAL CARE

Resolution No. 13.

Author: San Mateo delegation.

Whereas, Coordinated Medical Care of the patient in the home has been conclusively proven to be beneficial to the patient, the family, the hospital, and, therefore, the physician; and

Whereas, there are at the present time at least eight coordinated Home-Care programs in the State of California; and

Whereas, the California Physicians' Service is currently running a pilot program on financing such a program; now, therefore, be it

Resolved: That California physicians be urged to assume the leadership in, as well as the support of such community projects; and be it further

Resolved: That all voluntary health insurance agencies, including California Physicians' Service, be urged to accept and subsidize all such programs which are adequately projected and organized.

ACTION: Adopted by House.

* * *

INCREASING COST OF RUNNING THE C.M.A.

Resolution No. 14.

Author: San Mateo delegation.

ACTION: Not adopted by House.

* * *

NATIONAL BLUE SHIELD PLAN

Resolution No. 15.

Author: Ward L. Hart.

Representing: San Mateo County Medical Society.

ACTION: Not adopted by House.

* * *

OUTLINE OF AN ADEQUATE MEDICAL PROGRAM

Resolution No. 16.

Author: William H. Thompson.

Representing: San Mateo County Medical Society.

Whereas, the medical profession is able to best determine what constitutes good medical care and thus an ideal medical program; and

Whereas, many medical programs as proposed by and actually sold or contracted for or by insurance companies, lay organizations, labor unions, corporations, and local, state and federal agencies, and government and individuals fall far below even minimum needs; and

Whereas, frequently an inadequate medical program may in actuality be expensive and even at times detrimental; now, therefore, be it

Resolved: That the California Medical Association make available publicly and as rapidly as possible the outline of an adequate medical program which the above organizations and individuals should expect and demand; and be it further

Resolved: Set up state and local committees who would be available as consultants to further advise groups and individuals along these lines; and be it further

Resolved: That the California Medical Association shall not ascribe or infer a cost of this program.

ACTION: Adopted by House.

* * *

BIRTH CONTROL IN CALIFORNIA

Resolution No. 17.

Author: William H. Thompson.

Representing· San Mateo County.

(Resolutions Nos. 17, 30 and 37 were considered as a group. A substitute resolution for No. 17 was presented and approved by the House; with amendment, Nos. 30 and 37 were also adopted.)

Whereas, the need for family planning exists in various socioeconomic groups of the population; and

Whereas, such family planning services are not available in many communities; and

Whereas, these services should properly be included with every adequate medical care program; now, therefore, be it

Resolved: That the California Medical Association go on record as stating that an adequate medical program should include family planning education and service.

ACTION: Adopted by House.

* * *

BASIC PRINCIPLES IN MEDICAL INSURANCE

Resolution No. 18.

Author: William H. Thompson.

Representing: San Mateo County Medical Society.

(Resolutions Nos. 18, 40, 53 and 54 were considered as a group. All were voted to be referred to an ad hoc committee to be appointed by the Speaker of the House of Delegates.)

Whereas, any medical insurance or care program, either private or governmentally operated must of necessity have certain defined limits of cost and thus payments; and

WHEREAS, there must be built-in controls, both moral and legal, applied to recipients of service as well as the purveyors and payers of this service; now, therefore, be it

Resolved: That the California Medical Association state publicly and strive for in all its deliberations with any governmental medical care agency, as well as other medical insurance plans the following basic principles:

1. Payments must be made by the payer to the recipient of the service according to a schedule which pays a reasonable amount toward, but rarely the total, usual reasonable customary fee,
2. Each recipient of service must have preserved his right of freedom as to choice of physician,
3. It is the right of each recipient of service to receive up to the scheduled amount toward his doctor's fee and hospital care and other medical costs, whether the physician accepts this, in toto, or as part payment,
4. The local medical societies must vigorously protect the patient and physicians as to the justice of the fees and services provided.

ACTION: Referred to ad hoc committee to be appointed by Speaker of House.

* * *

FORMATION OF PROFESSIONAL ASSOCIATIONS IN CALIFORNIA

Resolution No. 19.

Author: William H. Thompson.

Representing: San Mateo County Medical Society.

WHEREAS, the present tax structure is inequitable in not allowing physicians the same benefits on retirement funds as is allowed the vast majority of citizens employed by corporations; and

WHEREAS, certain other tax-free benefits such as life, health and accident insurance are also denied physicians, but are available to persons in industry; and

WHEREAS, the partnership laws in the State of California prohibit the formation of a professional association, such as may be formed in certain other states; and

WHEREAS, on December 5, 1957, the House of Delegates of the American Medical Association has affirmed the ethical propriety of the formation of professional associations provided ownership and management remains in the hands of the licensed physicians; and

WHEREAS, the Council of the California Medical Association has opposed legislation designed to correct this inequitable taxation of professional persons; now, therefore, be it

Resolved: That this House of Delegates instruct the Council of the California Medical Association to actively initiate and support such legislation as is necessary to allow the formation of professional associations in the State of California; and be it further

Resolved: That the Council of the California Medical Association report the results of its efforts to the 1963 meeting of this House of Delegates.

ACTION: Referred to Council; see Resolution No. 1.

* * *

LIAISON COMMITTEES TO COUNTY GOVERNMENTS

Resolution No. 20.

Author: San Mateo delegation.

WHEREAS, a significant and ever increasing number of persons residing in California receive medical services, both in-patient and out-patient, through various governmental aid programs, administered locally by county agencies; and

WHEREAS, such local administration is preferable to one more centralized; and

WHEREAS, the physician is the keystone to the provision of all medical services; and

WHEREAS, these programs deserve the best possible implementation; now, therefore, be it

Resolved: That the California Medical Association encourage its constituent societies to offer their expert consultative services to the appropriate county boards supervising such provisions of medical services by means of permanent liaison committees.

ACTION: Adopted by House.

* * *

FEE SCHEDULE OF THE M.A.A. PROGRAM IN CALIFORNIA

Resolution No. 21.

Author: San Mateo delegation.

WHEREAS, the medical profession has supported the Kerr-Mills principle of state and federal payment of locally administered comprehensive medical care for the elderly of limited means; and

WHEREAS, the Medical Assistance for Aged (M.A.A.) program's fee schedule as administered in California is based upon a subsidy from physicians in the form of low payment often below cost; and

WHEREAS, unqualified endorsement of this program and its fees by the California Medical Association forces practicing physicians to choose either acceptance of inadequate fees or rejection of the Kerr-Mills principle; and

WHEREAS, this present program and its fees may be the prototype of similar programs in the future; now, therefore, be it

Resolved: That this House of Delegates:

1. Express its strong disapproval of the unrealistic fee schedule of the M.A.A. program in California,

2. Support only those plans which provide quality care for patients and realistic compensation for professional service,

3. Urge adoption of a $5 unit conversion factor for each of the four sections of the 1960 Relative Value Studies for the current program year,

4. Provide for annual revision of this schedule in accord with the changing economy and the most recent Relative Value Studies.

ACTION: Referred to ad hoc committee, together with Nos. 22 and 39; see Resolution No. 18.

* * *

STATE MEDICAL CARE FEE ALLOWANCES

Resolution No. 22.

Author: San Mateo delegation.

WHEREAS, in the past, the leaders of the California Medical Association have encouraged the members to participate in the O.A.S. and M.A.A. programs despite a professional fee inequitable for much of the membership; and

WHEREAS, this is in effect an unintended subsidy of government by the medical profession; and

WHEREAS, all parties concerned, government and private, agree that this is unjust; now, therefore, be it

Resolved: That the California Medical Association inform the government of the State of California that it will not recommend that its members continue such participation, or enter into participation of any future program in which the fee is also unjust.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

* * *

CHARITABLE CONTRIBUTION OF SERVICES

Resolution No. 23.

Author: William H. Thompson.

Representing: San Mateo County.

ACTION: Not adopted by House.

* * *

DISPENSING OF DRUGS TO GOVERNMENT PATIENTS

Resolution No. 24.

Author: Harry F. Smith.

Representing: San Mateo County.

WHEREAS, many physicians dispense their own medication to their private patients; and

WHEREAS, "direct dispensing" is not possible under the O.A.S., A.N.C., and M.A.A. programs; and

WHEREAS, the advantages to direct dispensing include:

1. Greater economy (e.g., often two or three tablets),

2. Greater convenience to patient (often obviates a trip to the pharmacist when such a trip is a hardship),

3. Less duplication (often allows physician to "try" a medication prior to prescribing a larger quantity),

4. Greater speed in initiating therapy, and

WHEREAS, there are many precedents among which is the Workmen's Compensation Law; now, therefore, be it

Resolved: That the House of Delegates of the C.M.A. use every effort available to obtain reimbursement to individual physicians for drugs dispensed under current and future government-financed medical programs.

ACTION: Referred to Liaison Committee to State Department of Social Welfare.

* * *

OVER-INSURANCE

Resolution No. 25.

Author: T. D. Englehorn.

Representing: Monterey County.

WHEREAS, many people have insurance coverage for medical, surgical and hospital costs with more than one insurance carrier, either individual and/or group insurance through employment, and/or as a dependent of their spouse through individual or group insurance, and frequently at the same time are covered by industrial insurance; and

WHEREAS, this has been recognized by the Insurance Commission and State Legislature without any appropriate solution to the problem; and

WHEREAS, this results in increasing materially the costs of medical care at a time when efforts are being made to prevent further inflation of such costs; and

WHEREAS, this also frequently results in the individual making more money while disabled than when working, making for prolonged hospitalization and slowing down of recovery; now, therefore, be it

Resolved: That the California Medical Association recognizes this as a problem and that it shall recommend further study and appropriate action by the Insurance Commissioner and the State Legislature.

ACTION: Referred to Commission on Medical Services.

MEDICAL DISCIPLINARY BOARD

Resolution No. 26.

Author: Leon P. Fox.

Representing: Santa Clara County Medical Society.

WHEREAS, disciplinary procedure for violations of medical practice regulations in California is multifaceted with many areas of confusion, lack of coverage and questionable authority; and

WHEREAS, the State of Washington has by legislative action established an effective board, consisting of doctors of medicine elected by all licensed physicians, which successfully controls all disciplinary matters related to the practice of medicine; and

WHEREAS, this board includes the jurisdiction of the medical society, board of medical examiners, state board of health and other pertinent bodies; and

WHEREAS, the California Medical Association is constituted for the purpose of protecting the public health and bettering the medical profession; now, therefore, be it

Resolved: That this House of Delegates direct the Committee on Legislation or other appropriate committee to study the feasibility of instigating legislation which would establish an overall authoritative Medical Disciplinary Board in California; and be it further

Resolved: That the Committee on Legislation be further directed to promulgate such legislation if it is found to be opportune.

ACTION: Referred to Council.

* * *

INSURANCE REQUIREMENTS

Resolution No. 27.

Author: Donald M. Gallagher.

Representing: San Francisco.

ACTION: Withdrawn by author.

* * *

CALIFORNIA PHYSICIANS' SERVICE

Resolution No. 28.

Author: L. Henry Garland.

Representing: San Francisco.

ACTION: Not adopted by House.

* * *

REFERENCE COMMITTEE NO. 2

Resolution No. 29.

Author: San Francisco delegation.

WHEREAS, the responsibilities of C.M.A. Reference Committee No. 2 are to serve as a committee of inquiry, to hold an open meeting at the time of the state convention in order that delegates may ask questions regarding the financial affairs of the association, to review the budget for the next year, to make a recommendation setting the dues for the ensuing year, to review the reports of the secretary and the executive secretary, and to make a recommendation concerning these reports to the House of Delegates for their approval, and to perform such other duties as may be directed to them; and

WHEREAS, the members of the committee bring no special knowledge to the state convention concerning the financial affairs of the association; and

WHEREAS, the proper functioning of this committee would appear to be both necessary and desirable; and

WHEREAS, the Association has become big business, spending $1,300,000 a year; now, therefore, be it

Resolved: That the following recommendations be approved and implemented:

1. The committee shall be considered semi-permanent. It shall study, throughout the year, the expenditure of the Association's funds, and report to the House of Delegates at the annual session,

2. To accomplish the above, the committee shall have access to the books of the California Medical Association and its fully owned affiliates; it shall obtain consultation with the C.M.A. auditor as it may deem necessary; it shall meet during the year as it shall find necessary; and it may occasionally request members of the Association and employees of the Association to meet with it,

3. The new member or members should be appointed at least 60 days before the convention.

ACTION: Referred to Speaker and Council.

* * *

ABORTION AND STERILIZATION PROCEDURES

Resolution No. 30.

Author: San Francisco delegation.

WHEREAS, the current law in California pertaining to therapeutic abortions and sterilizations is not adequate to serve the health and welfare needs of the people; and

WHEREAS, a proposed revision of the law is under study by the Legislature and would allow the consideration of therapeutic abortion and sterilization procedures to protect the *health* of a mother, where now the only consideration is that her *life* be threatened; now, therefore, be it

Resolved: That the C.M.A. go on record as supporting legislation protecting the health of a mother in the consideration of therapeutic abortion and sterilization procedures; and be it further

Resolved: That the facilities of the C.M.A. be used to provide any pertinent information for the use of the legislators.

ACTION: Adopted by House; see also No. 17.

INSURANCE PREMIUMS TAX DEDUCTION

Resolution No. 31: See Resolution No. 12.

Author: San Francisco delegation.

* * *

FOREIGN MEDICAL SCHOOL GRADUATES

Resolution No. 32.

Author: San Francisco delegation.

WHEREAS, at present the restrictive laws on postgraduate training for foreign medical school graduates present many difficulties; now, therefore, be it

Resolved: That the House of Delegates recommend modification of the Medical Practice Act to accomplish the following:

1. That qualified physicians from other countries be permitted to undergo residency training in California for periods up to five years providing the candidate (a) satisfactorily completes the ECFMG examination; (b) meets the requirements of and is accepted for an approved residency; (c) register with the Board of Medical Examiners,
2. No time spent in such training to be credited toward qualifying for medical licensure in California. Physicians trained under this program who desire to qualify will be required to fulfill all the requirements pertaining to nonaliens,
3. Physicians entering California under this program will not be eligible to start a program for licensure until after having returned to their own country for a period equal in time to that spent in training here.

ACTION: Referred to Council.

* * *

EMERGENCY RESOLUTION EVALUATION

Resolution No. 33.

Author: Tenth District.

WHEREAS, many resolutions are completed and introduced only the week prior to the annual C.M.A. House of Delegates meeting makes their circulation, evaluation, and assignment difficult and therefore, at times, disappointing to interested members, delegates, or delegations; and

WHEREAS, it has heretofore been considered the responsibility of the Council or Speaker of the House of Delegates to receive and determine the assignment of such resolution; now, therefore, be it

Resolved:

1. That an emergency resolution evaluation committee be created to receive and consider all resolutions introduced after an announced date, generally seven days prior to the opening meeting of the House of Delegates,
2. That such committee be composed of chairmen of the House Reference Committee with the chairman of Reference Committee No. 1 serving as chairman of the emergency resolution evaluation committee (Reference Committee chairmen are appointed well in advance of the House of Delegates meeting),
3. That this committee be assigned all resolutions considered in such "late" or "emergency" category and empowered to reject or assign such resolutions as the merits of the resolution dictate in the committee's estimation,
4. That the intent and purpose of this resolution will not and does not preclude a delegate or delegation from introducing emergency resolutions under the call for new business with the attendant rules as has heretofore been the custom.

ACTION: Adopted through adoption of By-Law Amendment No. 7.

* * *

SPECIALTY PRACTICES AS PROFESSIONAL SERVICES

Resolution No. 34.

Author: Tenth District.

WHEREAS, the California Medical Association and the American Medical Association recognize the specialties of Anesthesiology, Medicine, Neurology, Pathology, Radiology, etc., as the practice of medicine; and

WHEREAS, the C.M.A. and A.M.A. insist that their members in the above specialties conduct their professional practice in the same ethical manner as members in other fields of medicine as concerns physician-patient-hospital relationships; and

WHEREAS, the C.M.A. and A.M.A. therefore insist that these said physicians be accorded the same considerations as all other physicians by "third parties"; now, therefore, be it

Resolved: That the California Medical Association vigorously disapprove the inclusion, as a *Hospital Service* or a *Professional Hospital Service*, of Anesthesiology, Medicine, Neurology, Pathology, Radiology, etc., in all "Guiding Principles," in governmental directives and/or schedules referring to hospital services, in commercial health and accident insurance contracts and schedules, etc.; and be it further

Resolved: That the C.M.A. specifically requests the removal of paragraph VI "Professional Services," under the general heading of "Standard Hospital Services," in the publication entitled "Guiding Principles for Hospitals" published by the San Francisco Hospital Conference and the Hospital Council of Southern California; and be it further

Resolved: That this resolution be sent to the offices of each specialty society, to all health and accident insurance carriers licensed in California, to all hospitals in California and the California Hospital Association, to the California Department of Social Welfare and the Department of Public Health, and to the United States Department of Health, Education and Welfare.

ACTION: Adopted by House.

LIBERTY AMENDMENT

Resolution No. 35.

Author: Leon P. Fox.

Representing: Santa Clara County Medical Society.

ACTION: Tabled by House.

⁂

NURSE PRACTICE ACT

Resolution No. 36.

Author: Santa Clara delegation.

WHEREAS, the California Legislature in 1957 amended the Nurse Practice Act to permit the establishment for a trial period of 5 years of two-year courses of training leading Registered Nurse Licensure; and

WHEREAS, courses under the legislation have been established in 20 California junior colleges with 5 more due to open in the fall of 1962; and

WHEREAS, 11 of these junior college programs are in communities which do not now have any nursing school, and

WHEREAS, a study of these graduates in 1960 has shown that their scores in the State Nursing Licensure examinations were equal to the scores of graduates of the standard, three-year nurse training courses; and

WHEREAS, studies of employment of graduates of these programs showed 71 per cent employed at the end of one year after their graduation; and

WHEREAS, 75 per cent of the graduates are employed in the community where they were educated; and

WHEREAS, the increase in population in California with its concomitant increase in the number of physicians and of hospitals makes ever increasing numbers of well-trained registered nurses essential; and

WHEREAS, the present supply of registered nurses is inadequate; and

WHEREAS, the trial period of 5 years for this two-year program expires in 1962; now, therefore, be it

Resolved: That this House of Delegates of the California Medical Association instruct the Council of C.M.A. to instruct its Committee on Public Policy to exert every effort to assure that the Nurse Practice Act be suitably amended in the 1963 Legislature to authorize permanent inclusion of two-year programs leading to Registered Nurse Licensure.

ACTION: Referred to Council, with request for prompt action.

⁂

THERAPEUTIC ABORTION

Resolution No. 37.

Author: Santa Clara delegation.

WHEREAS, the existing laws relating to therapeutic abortion and the present standards of practice of reputable members of the medical profession in acceptable hospitals in California are incongruous; and

WHEREAS, Assembly Bill 2614, which is now under study in the Criminal Procedures Committee of the state legislature, does afford a practical and scientific means of controlling justifiable abortion by the use of authorized hospital committees; and

WHEREAS, the legal jeopardy of all licensed physicians will be lessened by activating this law; now, therefore, be it

Resolved: That this House of Delegates direct the Committee on Legislation and other pertinent bodies to strongly support the objectives of A.B. 2614 and use every effort to bring forth positive action thereon.

ACTION: Adopted by House; see also No. 17.

⁂

BLOOD ALCOHOL TESTS

Resolution No. 38.

Author: E. Kash Rose.

Representing: Napa County Medical Society.

WHEREAS, the automobile accident rate and deaths are constantly increasing in California and a most common cause is driving while intoxicated; and

WHEREAS, physicians so frequently become involved in the determination of degree of intoxication; and

WHEREAS, at present there is considerable risk legally to the physician who draws blood for alcohol determination with or without consent; and

WHEREAS, it has been the policy of the C.M.A. to be concerned with all facets of public welfare as related to automobile injuries; now, therefore, be it

Resolved: That the C.M.A. sponsor or cause to be sponsored in the California State Legislature legal proper legislation to remove or lessen the risk to physicians who desire to cooperate in drawing of blood alcohol.

ACTION: Adopted by House.

⁂

STATE AGENCY FEE SCHEDULES

Resolution No. 39.

Author: Chairman of the delegation.

Representing: Alameda-Contra Costa Medical Association.

WHEREAS, fees paid by State agencies for medical services under the Public Assistance Medical Care Act are based on schedules adopted five or more years ago; and

WHEREAS, at that time the fees paid by these agencies were below the usual and customary charges for the services rendered; and

Whereas, in the past five years there have been increases in the physician's overhead, in cost of living, in wage scales, and in the salaries of personnel employed by the state to administer this program; and

Whereas, there has been no increase in the fees paid to doctors for medical services; and

Whereas, this has resulted in a restricted choice of physicians for patients whose health services are purchased under this program; now, therefore, be it

Resolved: That the California Medical Association further urge the State of California to establish realistic fees for medical services purchased by state agencies, in keeping with the general medical costs in each community, and thus provide for medical care by physicians under all conditions of medical practice.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

* * *

USE OF STATE AGENCY FEES AS INDEMNITY PAYMENTS

Resolution No. 40.

Author: Chairman of the delegation.

Representing: Alameda-Contra Costa Medical Association.

Whereas, state agency fee schedules provide levels of payment substantially below the usual and customary charges for physicians' services; and

Whereas, many physicians are unable to provide services to patients for these amounts; and

Whereas, this results in a limited choice of physicians; and

Whereas, patients are presently prohibited from using these payments in a manner which will assist them to whatever extent is necessary and appropriate, thereby increasing the flexibility and productiveness of the program for the recipient; now, therefore, be it

Resolved: That when the amounts provided by state medical programs are less than the usual and customary charges for the services provided, the patient should have the right to use these substandard fee allowances as partial indemnities toward his physician's normal charges, by prior agreement between the patient and his physician on the total fee to be charged, and that the C.M.A. inform the Welfare Department of the desirability of such a change in the administrative rules governing state medical programs.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

MEDICAL REPORTS FOR GOVERNMENT AGENCIES

Resolution No. 41.

Author: Chairman of the Delegation.

Representing: Alameda-Contra Costa Medical Association.

Whereas, medical reports are frequently requested from attending physicians by government agencies; and

Whereas, many of these reports call for more information than that customarily furnished as part of the physician's normal service to his patients; and

Whereas, the preparation of such reports requires the expenditure of professional and secretarial time; and

Whereas, the value of the service is recognized and paid by nongovernment insurance companies; and

Whereas, government agencies do not provide payment for such reports, and this fact increases the number of reports required; now, therefore, be it

Resolved: That the California Medical Association urge government agencies to provide remuneration for medical reports requesting more information than that which is customarily furnished as part of the physician's normal service to his patient, whenever it is not appropriate or feasible for the patient to be charged for this service.

ACTION: Referred to Commission on Medical Services.

* * *

NATIONAL BLUE SHIELD HEALTH INSURANCE PLANS

Resolution No. 42.

Author: Chairman of the delegation.

Representing: Alameda-Contra Costa Medical Association.

Whereas, inadequate health insurance benefits lead to justifiable dissatisfaction on the part of the public; and

Whereas, any deficiencies in Blue Shield plans reflect unfavorably on the medical profession, since this type of insurance is sponsored by organized medicine; and

Whereas, greater progress has been made toward comprehensive benefits and realistic coverage by the Blue Shield plan in California (C.P.S.) than has been made in many other states; and

Whereas, these advances would be nullified if C.P.S. adopted any national Blue Shield plans offering lesser benefits than those now provided by C.P.S.; now, therefore, be it

Resolved: That national Blue Shield contracts implemented in California should offer a range of health services and payments at least equal to contracts being currently offered by C.P.S.

ACTION: Adopted by House.

CLAIMS REVIEWS

Resolution No. 43.

Author: Chairman of the delegation.

Representing: Alameda-Contra Costa Medical Association.

WHEREAS, government medical care programs require controls in the disbursement of funds for the purchase of health services; and

WHEREAS, county medical societies have established effective mechanisms to review medical problems, the propriety or necessity of medical services rendered, and the level of fees charged by physicians; and

WHEREAS, these problems are not always well-understood by nonmedical personnel; and

WHEREAS, unjustified rejections of claims for medical services by government administrative personnel leads to reduced cooperation with government medical programs by physicians; and

WHEREAS, the Public Assistance Medical Care Plan under the Social Welfare Departments of the counties has demonstrated the excellent and successful use of these mechanisms in the form of medical society committees; now, therefore, be it

Resolved: That government medical programs should rely on the established mechanisms of local county medical societies, rather than taking independent and arbitrary action, in any cases where there are questions of the proper medical practice, or the proper charges for services, by physicians.

ACTION: Adopted by House.

⁂

CREATION OF NEW SURGICAL SUB-SPECIALTY

Resolution No. 44.

Author: Alameda-Contra Costa Medical Association.

Resolved: That the action taken by the Section on General Surgery of the American Medical Association in sponsoring the proposed American Board of Abdominal Surgery to the Advisory Board for Medical Specialties does not reflect a widespread considered judgment of American medicine and should therefore be dismissed; and be it further

Resolved: That the California Medical Association is uniformly opposed to the creation of a Board of Abdominal Surgery on the basis of the fact that it is redundant and will not supplement or reinforce any phase of American medicine not already surveyed by a specialty board; and be it further

Resolved: That the representatives of the State of California to the American Medical Association House of Delegates be requested to act in general to promote the adoption of a similar resolution by the American Medical Association House of Delegates.

ACTION: Adopted by House in amended form above.

TAX DEFERRED PENSION PLAN

Resolution No. 45.

Author: Chairman of the delegation.

Representing: Alameda-Contra Costa Medical Association.

Resolved: That the California Medical Association House of Delegates use all influence to cause to be introduced in the next session of California Legislature a bill that permits tax-deferred use of professional income for purposes of establishing pension funds; and be it further

Resolved: That the California Medical Association cooperate actively with other professional and self-employed persons to endorse the passage of the legislation.

ACTION: Referred to Council; see Resolution No. 1.

⁂

PROFESSIONAL SELF-EVALUATION

Resolution No. 46.

Author: Samuel R. Sherman.

Representing: The Council.

WHEREAS, the ethical principles of most professions such as medicine, dentistry, law and others require that the members continually strive to improve the knowledge and skill of the profession and make available to the public and their colleagues the benefits of their professional attainments; and

WHEREAS, the members of such professions must enforce and abide by self-imposed disciplines in matters relating to the proper and ethical practice of the profession; and

WHEREAS, the implementation of these principles is required of physicians in the by-laws of hospitals or statutes through professional evaluation and review committees such as hospital medical audit, tissue and record committees; and

WHEREAS, the work of these committees does not specifically relate to the care given a particular patient but rather pertains to maintaining and improving the quality of professional care of all patients and of the continuing training for physicians; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association recommend to the California State Legislature that a statute with the following purpose be enacted—that the term writing and record as used in laws relating to evidence admissible in trial of action, shall not include reports of medical audits, tissue committee or other written self-evaluation conducted in hospitals by the professional services, in compliance with recommendations of the Joint Commission on Accreditation of Hospitals, or other such agencies for maintaining or improving quality of professional care for all patients and continuing training for physicians.

ACTION: Adopted by House.

HEALTH INSURANCE EDUCATION

Resolution No. 47.

Author: Marin Medical Society.

WHEREAS, the California Medical Association, as well as the American Medical Association, has actively supported the Health Insurance Industry in promoting the utilization of voluntary health insurance as the realistic approach to the financing of medical care; and

WHEREAS, there exists an extremely broad divergence in the types and quality of health and accident insurance policies available to the citizens of California; and

WHEREAS, insurance plans which offer unrealistic benefits frequently cause disillusionment on the part of the patient and create unexpected financial burdens; and

WHEREAS, this serves to disrupt the relationship between doctor and patient, and thereby limits the physician's ability to render optimum care; and

WHEREAS, the medical profession is most acutely aware of the deficiencies of many health insurance contracts currently being offered; now, therefore, be it

Resolved: That the Council of the C.M.A. initiate a program to inform and educate the public as to what contract benefits and desirable features should be provided in a realistic health insurance contract.

ACTION: Adopted by House.

* * *

NEW A.M.A. OFFICER

Resolution No. 48.

Author: Marin Medical Society.

WHEREAS, the problems involving the financing of medical care in the United States have risen to staggering proportions; and

WHEREAS, the vast majority of these problems are nationwide in scope; and

WHEREAS, the American Medical Association is the medical profession's major provider of information and advice to the public on the financing of medical care; now, therefore, be it

Resolved: That the California Delegation to the House of Delegates of the American Medical Association strongly consider suggesting the creation of a second and separate position of Executive Vice-President, which person's sole duty will be to coordinate all activities of the American Medical Association in connection with the financing of medical care.

ACTION: Adopted by House.

C.P.S. COMMENDATION

Resolution No. 49.

Author: Marin Medical Society.

Resolved: That the California Physicians' Service be commended for its efforts in exploring and providing insurance programs for the indigent and near-indigent in cooperation with local, state and federal governmental agencies; and be it further

Resolved: That the California Physicians' Service be instructed by this House to continue in these efforts and to utilize existing medical care legislation to the fullest extent possible.

ACTION: Adopted by House.

* * *

RATTIGAN ACT

Resolution No. 50.

Author: Marin Medical Society.

WHEREAS, the Rattigan Act is proving to be an effective means of assisting in the long term medical care of California's indigent aged population; and

WHEREAS, it has been the policy of the California Medical Association to give articulate support to this act, and to explore ways and means of still further improving it; and

WHEREAS, the current 30-day waiting period has caused certain inequities to occur in terms of total costs which must be borne by the patient depending on the particular medical problem involved; now, therefore, be it

Resolved: That the Council of the California Medical Association or its representatives, meet with the State Department of Social Welfare, to consider the feasibility of amending the Rattigan Act to allow for a fixed dollar expenditure and/or a reduced waiting period before coverage begins, rather than the 30-day waiting period which is currently in force.

ACTION: Adopted by House.

* * *

COUNTY SOCIETY APPROVAL FOR C.P.S. ACTIVITIES

Resolution No. 51.

Author: Robert Stragnell.

Representing: Los Angeles County.

WHEREAS, some of the policies of California Physicians' Service do not necessarily conform to the expressed desires of some county medical societies; and

WHEREAS, criticism has been directed toward California Physicians' Service for failure to notify certain counties of pending contractual negotiations; now, therefore, be it

Resolved: That where major contracts are being negotiated by C.P.S., consultation be made with the appropriate governing body of the county medical society.

ACTION: Adopted by House in above amended form.

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CALIFORNIA PHYSICIANS' SERVICE—ITS PURPOSE

Resolution No. 52.

Author: L.A.C.M.A. delegation.

ACTION: Not adopted by House.

* * *

ADOPTION OF THE PRINCIPLE OF INDIVIDUAL RESPONSIBILITY

Resolution No. 53.

Author: L.A.C.M.A. delegation.

WHEREAS, the practice of medicine is currently under pressure by some legislators to convert it piecemeal into a government controlled system; and

WHEREAS, a government controlled system lacks the element of individual responsibility; and

WHEREAS, government bureaucracy breeds mediocrity; and

WHEREAS, it is the responsibility of American medicine to maintain the pattern of excellence and reject government domination and bureaucratic control; and

WHEREAS, the medical profession needs a workable mechanism by which it can unite its members to permanently reverse the inroads of government domination and preserve the free enterprise system; now, therefore, be it

Resolved: That the California Medical Association reject past and future programs that encourage bureaucratic control of medicine and immediately approve and adopt those systems which embody the principle of individual responsibility.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

* * *

APPLICATION OF INDIVIDUAL RESPONSIBILITY TO STATE AND FEDERAL PROGRAMS

Resolution No. 54.

Author: L.A.C.M.A. delegation.

WHEREAS, the present California State Welfare Program (O.A.S. et al.) is operated under the principle of collective responsibility and has essentially rejected placing responsibility on relatives (Section 2181, as amended, Welfare and Institutions Code)*; and

WHEREAS, under the present welfare program, the recipient has no responsibility and his relatives have practically no legal responsibility (Section 2181, as amended, effective January 1, 1962); and

WHEREAS, California Medical Association's continued participation in a bureaucratically controlled program of the vendor-type, only provides the basis for future passage of similar programs; now, therefore, be it

Resolved: That the California Medical Association recommend to the State Welfare Board, through our Advisory Committee, that the entire California State Welfare Program be returned immediately to the recipient system embodying individual responsibility.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

* * *

AID TO NEEDY CHILDREN

Resolution No. 55.

Author: L.A.C.M.A. delegation.

WHEREAS, the Department of Social Welfare has radically restricted the medical procedures which can be used on recipients of medical care under the Aid to Needy Children Program; and

WHEREAS, such restricted medical care is substandard and constitutes a hazard to the health and lives of recipients of care under this program, therefore, be it

Resolved: That the California Medical Association objects to the curtailment of medical procedures by the Department of Social Welfare; and be it further

Resolved: That when funds are not available to provide an adequate quality of medical care, the California Medical Association strongly urges the Department of Social Welfare to transfer some of the involved recipients to other medical facilities, such as county hospitals.

ACTION: Adopted by House.

* * *

ACCEPTANCE OF REGIONAL STANDARD FORMS BY STATE WELFARE AGENCIES

Resolution No. 56.

Author: L.A.C.M.A. delegation.

WHEREAS, the current California State Welfare Program employs a vast system providing medical care to the needy; and

WHEREAS, completion of state forms and prescription blanks increase the physicians' overhead costs; and

WHEREAS, physicians are desirous of furnishing care at the most equitable possible cost; and

WHEREAS, such private agencies as Blue Cross, under similar circumstances, are able to process standard forms; now, therefore, be it

Resolved: That California Medical Association reappraise its policy of using State Welfare forms and advise the State Welfare Board that it accept standard forms as used in the various counties.

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*Legal responsibility of a child for parent, i.e., male, married, two children, income under $1,000.00 per month. Legal financial responsibility $0.00.

ACTION: Adopted by House.

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PROTECTION OF PHYSICIANS FROM STATE CONTROL

Resolution No. 57.

Author: L.A.C.M.A. delegation.

WHEREAS, cooperation with any state and federal programs operating under the vendor concept entails direct payment of physicians by government agencies; and

WHEREAS, acceptance of financial remuneration from the government constitutes de facto employment and control of physicians by these agencies and bureaus; and

WHEREAS, the practicing American physician has no desire whatsoever in becoming a government employee (hireling); and

WHEREAS, American Medicine can only continue to be free under a system which embodies and practices individual responsibility; now, therefore, be it

Resolved: That the California Medical Association immediately press for abolition of the vendor concept in favor of the recipient concept in all public medical programs in California.

ACTION: Referred to ad hoc committee; see Resolution No. 18.

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GUIDING PRINCIPLES FOR PHYSICIAN-HOSPITAL RELATIONSHIPS

Resolution No. 58.

Author: L.A.C.M.A. delegation.

ACTION: Not adopted by House.

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DELETION OF PAR. VI FROM "GUIDING PRINCIPLES FOR HOSPITALS"

Resolution No. 59.

Author: L.A.C.M.A. delegation.

WHEREAS, the California Hospital Association is distributing a brochure entitled "Guiding Principles for Hospitals"; and

WHEREAS, Paragraph VI of the "Guide" states the following: Professional Services—X-ray, Physical Medicine, Laboratory, Electroencephalography, Electrocardiography, etc., are professional departments, and fees charged should be based upon the usual and customary charges in this area. The California Medical Association and the California Hospital Association have approved the recommendation that the fee be assigned by the medical specialist to the hospital for collection; and

WHEREAS, the American Medical Association has defined Roentgenology, Neurology, Pathology, etc., as the practice of medicine and defined the professional services of physicians in these specialties as medical services; and

WHEREAS, Principles and directives concerning the professional services of physicians in hospitals are under the jurisdiction of the physician and the hospital medical staff, not the hospital administration or hospital association; now, therefore, be it

Resolved: That the California Medical Association rescind their recommendation that X-ray, Physical Medicine, Laboratory, Electroencephalography, Electrocardiology, etc., fees be assigned by the medical specialist to the hospital for collection; and be it further

Resolved: That the California Medical Association request the California Hospital Association to delete Paragraph VI and all reference of professional services provided by medical specialists from their brochure of "Guiding Principles for Hospitals."

ACTION: Adopted by House.

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NONPROFIT PROFESSIONAL LIBRARIES

Resolution No. 60.

Author: L.A.C.M.A. delegation.

WHEREAS, "Free Public Libraries" and property used for hospital and scientific purposes are exempt from taxation under the Law of California; and

WHEREAS, medical libraries are now being taxed although they are devoted to scientific purposes and to the spread of medical knowledge, for the benefit of the community as a whole; now, therefore, be it

Resolved: That the Legislative Committee be instructed to have introduced into the Legislature a law granting exemption from taxation to nonprofit professional libraries open to all members of the respective professions.

ACTION: Referred to Council, with instructions that "all practical steps be taken to implement resolution."

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LEGISLATION RE CORONER'S OFFICE

Resolution No. 61.

Author: L.A.C.M.A. delegation.

WHEREAS, the State Bar Association has appointed a committee to recommend changes in the law regulating the Coroner's Office; and

WHEREAS, there is a need for improving the medical and scientific standards in many coroners' offices; now, therefore, be it

Resolved: That the Council of the California Medical Association appoint a special committee of men familiar with the activities of the Coroner to meet with the committee of the State Bar Association for the purpose of developing legislation which can be supported by the Bar and the California Medical Association.

ACTION: Adopted by House.

* * *

SELF-EMPLOYED RETIREMENT ACT—STATE OF CALIFORNIA

Resolution No. 62.

Author: L.A.C.M.A. delegation.

Whereas, the Jenkins-Keogh principle of equality in taxation has been recognized as being fair and equitable; and

Whereas, in spite of the fact that the members of Congress have agreed that this is fair and just, yet certain members have persisted in postponing this legislation; and

Whereas, an example can be set by enacting legislation at the state level, which would have a salutary influence on Congress; now, therefore, be it

Resolved: That this House of Delegates instruct its Council to implement this principle by urging appropriate legislative measures at the state level, so that as far as the California state income tax is concerned, the self-employed individual will receive the same treatment taxwise as afforded individuals employed by corporations, namely, that he defer payment of taxes on funds set aside for his retirement until he actually receives said funds.

ACTION: Referred to Council; see Resolution No. 1.

* * *

DIRECT ELECTION OF C.M.A. COUNCILORS

Resolution No. 63.

Author: L.A.C.M.A. delegation.

Whereas, the California Medical Association councilors are now elected by the California Medical Association House of Delegates; and

Whereas, a substantial number of the current delegates are in favor of direct election of California Medical Association councilors by the membership at large; and

Whereas, the general membership earnestly desires the right to vote for their California Medical Association councilors; and

Whereas, the direct election by the membership at large will be following American custom of equal franchise; and

Whereas, the adoption of this method of voting for California Medical Association councilor officers will give the membership a more direct responsibility in the affairs of California Medical Association; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association direct the Council of the California Medical Association to initiate the necessary steps to initiate the change in the By-Laws and/or Charter structure of California Medical Association, to provide that the councilors of California Medical Association will be elected by direct vote of the general active membership within each councilor district of California Medical Association, by July 1, 1964.

ACTION: Referred to special ad hoc committee, together with 1962 Constitutional Amendment No. 4 and 1962 By-Law Amendment No. 12 and Resolution No. 81.

* * *

QUALITY OF MEDICAL CARE

Resolution No. 64.

Author: L.A.C.M.A. delegation.

Whereas, the citizens of the State of California expect the medical profession to provide the best quality medical care for all persons regardless of ability to pay; and

Whereas, the medical profession has no legal control over the quality of medical care dispensed; and

Whereas, a small but significant number of people require assistance in the financing of their medical care; and

Whereas, the insurance principle has been found to be a practical solution for said financing; now, therefore, be it

Resolved: That the California Medical Association request the Legislature of the State of California to appoint a committee to meet in liaison with the Council of the California Medical Association to propose legislation to (1) provide legal means whereby the medical profession can control the quality of medical care dispensed in this State, and (2) to indemnify financially needy citizens in the purchase of health insurance.

ACTION: Referred to Council.

* * *

APPOINTMENT OF CHAIRMEN OF C.M.A. COMMISSIONS

Resolution No. 65.

Author: L.A.C.M.A. delegation.

ACTION: Not adopted by House.

* * *

OPPOSITION TO SOCIALIZATION OF MEDICINE

Resolution No. 66.

Author: L.A.C.M.A. delegation.

Whereas, the physicians of the California Medical Association, guided by professional ethics and maintaining high professional standards in practicing under the American free enterprise system, are now providing good medical care for all citizens; and

Whereas, the King-Anderson Bill, or any similar type of legislation, seeks to place medical care for the aged, regardless of need, under Social Security taxation, which would injure the patient-physician relationship and would provide medical care regardless of need; and

Whereas, the King-Anderson Bill, or similar federal legislation financed by Social Security taxation would impose unwarranted increases in payroll taxes and would promote inevitable inefficiency and other defects inherent in the administration of welfare programs by the federal government; and

Whereas, legislation of the King-Anderson type would result in medical practice of inferior quality and yet more costly than that available through voluntary systems: now, therefore, be it

Resolved: That the members of the California Medical Association continue their vigorous opposition to legislation of the King-Anderson type.

ACTION: Adopted by House in above form.

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C.M.A. ACCELERATED PUBLIC RELATIONS PROGRAM

Resolution No. 67.

Author: Douglas Donath.

Representing: Los Angeles County.

ACTION: Not adopted by House.

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THE PHYSICIAN IN PUBLIC RELATIONS

Resolution No. 68.

Author: Ian Macdonald.

Representing: Los Angeles County.

Whereas, a general conviction associates the most favorable influence on the public image of medicine with the patient-physician relationship; and

Whereas, the physician usually is admired in the singular, but held in low esteem as part of the organized whole; and

Whereas, a majority of physicians exhibit a notable apathy in the face of the imminent engulfment by the socialist juggernaut of state welfarism, of the most effective system of medical care yet to be devised by man; now, therefore, be it

Resolved: That the chief direction of an accelerated public relations program be directed toward making every physician an active focus of public relations influence, in which effort the personnel in public relations available to California Medical Association should devote their major time, energy and talents.

ACTION: Adopted by House.

COORDINATED HOME CARE

Resolution No. 69.

Author: James C. Doyle.

Representing: Los Angeles County.

Whereas, the American people are entitled to the best medical care available; and

Whereas, home care provides for coordination of medical and ancillary services at a cost that is considerably under that of the hospital; and

Whereas, patients are happier, recover quickly at home, and a patient cared for at home frees a hospital bed for one acutely or critically ill; and

Whereas, widespread acceptance of this program could help in halting the spiralling cost upward of accident and health insurance; and would make it unnecessary to increase hospital facilities; and

Whereas, it should be stressed that coordinated home care is a *supplement*, not a substitute, for existing medical care; and

Whereas, it is essential that all segments of society be covered, the young, middle aged, as well as the aged; the financially independent as well as the less affluent and needy; and the care should include acute, convalescent, rehabilitative, as well as the chronic case; now, therefore, be it

Resolved: That the California Medical Association alert and inform the physicians and county societies regarding the importance of this program, and the need of early activation; and be it further

Resolved: That the California Medical Association actively participate and collaborate with the California Hospital Association, and other professions, to expedite the expansion of care in the home; and be it further

Resolved: That the California Medical Association House of Delegates instruct the California Delegates to the American Medical Association to introduce resolutions to implement the progress at the American Medical Association level, and to encourage other state and local societies to do likewise.

ACTION: Adopted by House.

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DISSEMINATION OF FACTS RE THERMONUCLEAR WARFARE

Resolution No. 70.

Author: Robert M. Dorn.

Representing: Los Angeles County.

Whereas, the reactions and behavior of individuals and groups, under stress, anxiety, and danger, have been well documented and represent a form of illness; and

Whereas, the potential for thermonuclear warfare, by creating a persistent threat to survival, can precipitate such an illness; and

WHEREAS, certain behaviors of the populace today suggest signs and symptoms of such illness: an avoidance of objective thinking, and a tendency to rely on rumor rather than search for facts; instances of apathy and paralysis of action; the desire that someone else assume responsibility; tendencies toward impulsive and purposeless action bordering on panic; an inability to observe and point out contradictory statements by people in positions of authority; an increase in suspicion, and loss of tolerance for others and for social issues, indicative that individuals and groups are reacting to tensions and conflicts; and

WHEREAS, many of these trends are reversible through the institution of corrective measures; therefore, be it

Resolved: That the California Medical Association, through its officers and Council, request the proper governmental authorities, national and state, to institute the following measures:

1. Clarification of issues and facts raised by the threat of thermonuclear warfare, as to survival of individuals and groups, and the communication of issues and facts, pro and con, to the public through authoritative channels,

2. The assistance, to individuals and groups, to face reality of the modern age, even if painful and discouraging, rather than permitting dependence on rumor, or denial of existing real dangers,

3. Utilization of intergroup and interdisciplinary cooperation.

Only through such clarification and facts, can the real dangers associated with thermonuclear war be faced, without the crippling effects of illness. A well-informed and healthy populace can exercise adequate judgment.

ACTION: Referred to Committee on Disaster Medical Care.

* * *

CHAMBERS OF COMMERCE

Resolution No. 71.

Author: Samuel R. Sherman.

Representing: The Council.

WHEREAS, the members of the House of Delegates of the California Medical Association meeting in convention in 1961 saluted the leadership of the Chambers of Commerce "in giving voice to citizens in all walks of life who are so vitally interested and concerned with the maintenance of the economic principles that stem from the freedom of the individual to provide for his own needs through voluntary effort" as distinguished from socialistic ideologies, "particularly as they define the dangers of government control of the health facilities of the nation," and

WHEREAS, physicians throughout California were urged to join the Chambers and lend their full support to all efforts to preserve the "principles of economic freedom and opportunity in order that stagnation and mediocrity shall not prevail," and

WHEREAS, it is particularly noteworthy that considerable success has greeted the objectives noted in 1961; now, therefore, be it

Resolved: That the members of the 1962 House of Delegates of the California Medical Association reaffirm these principles and objectives; and be it further

Resolved: That on this occasion when "Chamber of Commerce Week" is being celebrated in California, the California Medical Association reiterate its commendation and appreciation to the California State Chamber of Commerce and local Chambers of Commerce throughout the State for their unceasing work on behalf of preserving our cherished American traditions and private enterprise system; and that copies of this resolution be sent to the Chamber of Commerce of the United States and all news media in California.

ACTION: Adopted by House.

* * *

ADOPTIONS

Resolution No. 72.

Author: Santa Clara delegation.

WHEREAS, it is known that the C.M.A. Committee on Adoptions is most knowledgeable in this field; and

WHEREAS, at the direction of the House they have printed a manual of adoptions for physicians which prescribes the proper and ethical function of a physician in an independent adoption; and

WHEREAS, the chairman of the committee during the past year has appeared before both the California Senate and Assembly Judiciary Committees and offered the assistance of the Association in the study of improvements in existing adoption procedures; and

WHEREAS, it would further clarify the position of the profession regarding certain abuses that have been reported; be it

Resolved: That the C.M.A. House of Delegates reemphasize the time-honored ethical position of the profession which applies to adoptions as well as all other activities relating to the practice of medicine in that exploitation of patients in any manner is condemned, including the acceptance of unconscionable fees and fees for other than professional services rendered; and be it further

Resolved: That all component societies invite the public to report questionable practices to the county medical society disciplinary committees for appropriate study and action when indicated.

ACTION: Adopted by House in above amended form.

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C.M.A. DIRECTORY

Resolution No. 73.

Author: Henry G. Morgan.

Representing: Los Angeles.

ACTION: Not adopted by House.

* * *

EXPANDED INDEMNITY PROGRAM

Resolution No. 74.

Author: Burt L. Davis.

Representing: Councilor.

ACTION: Tabled by House.

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HOSPITAL STAFF PRIVILEGES

Resolution No. 75.

Author: Arthur G. Michels.

Representing: Los Angeles.

WHEREAS, hospital staff privileges should be granted on the basis of skill, training and competency of the physician, rather than other conditions or requirements; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association go on record, as strongly disapproving the granting or denial of hospital staff privileges, based upon any test except that of training, skill and competency of the physician, and specifically against test or restrictions that pertain to religion, race or color of the applicant; and be it further

Resolved: That a copy of this resolution be forwarded to the Hospital Council of California, and to all member hospitals of that Association, and hospitals within the State of California.

ACTION: Adopted by House.

* * *

GUIDING PRINCIPLES FOR PHYSICIAN-HOSPITAL RELATIONSHIPS

Resolution No. 76.

Author: James C. MacLaggan.

Representing: Councilor.

WHEREAS, the Guiding Principles for Physician-Hospital Relationships were adopted by the House of Delegates February 24, 1960; and

WHEREAS, certain portions of these Guiding Principles have been misinterpreted by some medical societies and hospital staffs; and

WHEREAS, clear understanding of the basic thoughts involved in these Guiding Principles is essential for implementation by all hospital staffs; now, therefore, be it

Resolved: That these several changes in wording be adopted:

1. In the section entitled *Role of the Physician in the Hospital,* on page two, the following shall be added to the last paragraph: "Staff appointments shall be reviewed and renewed annually. Information as to other hospital staffs upon which privileges are held shall be part of information reviewed."

2. On page five, paragraph 5(b) entitled *Medical Procedures,* the present statement shall be deleted and the following statement adopted:

"(b) Medical Procedures

> To make a qualitative analysis of medical procedures including the medical management of surgical patients undertaken at the hospital and to report to the Executive Committee its findings and recommendations."

3. Delete the last sentence starting on page five and ending at the top of page six and in its stead add: "He shall observe the concepts set forth in Section 4 of the A.M.A. Principles of Medical Ethics."

4. Delete the final paragraph on page seven and insert the following statement:

> "When the Executive Committee recommends and the hospital governing board approves the termination of a staff appointment *for cause,* the Executive Committee may, if the action is, in their opinion, justified, answer inquiries from the Executive Committee of other staffs on which the physician holds staff privileges, in writing, of the action taken and the reasons therefor."

ACTION: Adopted by House.

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POLIO SCHOOL IMMUNIZATION LAW

Resolution No. 77.

Author: George D. Lavers.

Representing: Tulare County Medical Society.

ACTION: Withdrawn by author.

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MASS POLIOMYELITIS IMMUNIZATION

Resolution No. 78.

Author: John T. Saidy.

Representing: San Mateo County Medical Society.

WHEREAS, the fundamental interest of the California Medical Association is the health care of all of California's citizens; and

WHEREAS, all three types of Sabin's oral poliomyelitis vaccine will be available for widespread and large scale use by fall 1962; and

WHEREAS, scientifically large scale immunization with Sabin vaccine is desirable and should be undertaken in the fall and winter months; and

WHEREAS, the present Salk vaccine program is temporarily achieving satisfactory control of polio obviating any urgent need for immediate immunization with Sabin vaccine; now, therefore, be it

Resolved: That this House of Delegates instruct the Council of the C.M.A. to immediately cause to be planned a coordinated C.M.A. and component society-sponsored immunization campaign; and be it further

Resolved: That all professional societies and agencies such as the American Academy of Pediatrics, Academy of General Practice, the Department of Public Health, etc. be immediately advised of this plan so that their advice and cooperation may be enlisted and so that all may know now of the program for this fall. Meanwhile, the present program of Salk immunization should be encouraged and supported.

ACTION: Adopted by House in above amended form.

* * *

SPORTS MEDICINE

Resolution No. 79.

Author: L. F. Armanino.

Representing: San Joaquin County Medical Society.

Whereas, there is increasing concern by the general public, by those engaged in various athletic programs and by the medical profession regarding the safety, health and care of the athlete; and

Whereas, the American Medical Association has organized a committee on the Medical Aspects of Sports, and 44 of the State Medical Associations now have special committees studying the matter of safety in school athletics; and

Whereas, this concern is not limited to school athletics, but with all forms and types of sports, amateur and professional; now, therefore, be it

Resolved: That the Council of the California Medical Association consider the establishment of an appropriate C.M.A. committee or subcommittee on the "Medical Aspects of Sports."

ACTION: Adopted by House.

* * *

TRANSPORTATION OF STRETCHER CASES BY COMMERCIAL AIRCRAFT

Resolution No. 80.

Author: Milo A. Youel.

Representing: San Diego County.

Whereas, passenger transportation by air has become a major form of travel; and

Whereas, this form of transportation to distant points is encouraged by the various commercial airline companies; and

Whereas, certain passengers who become injured or ill while away from their residence will desire to return home for medical care or convalescence; and

Whereas, many of the commercial airlines operating in the United States often do not accept wheelchair or stretcher cases; and

Whereas, many types of wheelchair and stretcher cases can be safely and, in fact, best transported by air; now therefore be it

Resolved: That this House of Delegates ask the A.M.A. to study and make recommendations on this subject.

ACTION: Adopted by House.

* * *

FORMATION OF NEW COUNCILOR DISTRICTS

Resolution No. 81.

Author: Richard D. Miller.

Representing: Los Angeles.

Whereas, the Council of the California Medical Association envisions the absorption of some 2,200 Osteopathic Physicians into the ranks of regular medicine; and

Whereas, the disproportionate representation of the Southern Counties in the Council of C.M.A. will be increased by the absorption of 1,800 out of the 2,200 Osteopathic members; now, therefore, be it

Resolved: That appropriate measure be immediately taken to formulate Councilor Districts throughout the entire state according to C.M.A. member population; and be it further

Resolved: That starting in 1964 there shall be direct vote in each Council or District by the C.M.A. members of that district for their particular C.M.A. Councilor; and be it further

Resolved: That one Councilor will represent 1,000 C.M.A. members; and be it further

Resolved: That redistricting be done every three (3) years.

ACTION: See Resolution No. 63.

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CONTRACT BY CALIFORNIA MEDICAL ASSOCIATION

Resolution No. 82.

Author: Allyn J. McDowell.

Representing: Los Angeles.

ACTION: Not adopted by House.

* * *

PARTISAN PRESENTATION

Resolution No. 83.

Author: Allyn J. McDowell.

Representing: Los Angeles County.

(Reference Committee No. 4 considered Resolution Nos. 83, 84 and 85 as a group and offered a substitute resolution in place of all three, as below.)

Resolved: That the C.M.A. House of Delegates request each county medical society to:

1. Establish liaison committees with the osteopathic group in each county for implementation of the merger agreement and establishment of necessary professional contact.

2. Establish means of assessing the standard of care rendered by each osteopath practising in that county.

3. Offer to serve in an advisory capacity to the California College of Medicine for the evaluation of each candidate for the M.D. degree. While recommendations of the county medical societies are not binding on the California College of Medicine, they serve as a guide for the awarding of the M.D. degree.

ACTION: Adopted by House.

* * *

EXPEDIENT PROMISES

Resolution No. 84; see Resolution No. 83.

Author: Allyn J. McDowell.
Representing: Los Angeles.

* * *

MORAL RESPONSIBILITY

Resolution No. 85; see Resolution No. 83.

Author: Allyn J. McDowell.
Representing: Los Angeles.

* * *

REPORTING OF EPILEPSY

Resolution No. 86.

Authors: Stanley Skillicorn and C. Gerald Scarborough.
Representing: Santa Clara County Medical Society.

WHEREAS, this House of Delegates unanimously voted in 1960 for Resolution 54 covering suggested changes in California law regarding mandatory reporting of Epilepsy; and

WHEREAS, the Traffic Safety Committee of the California Medical Association has, despite this direction of the House of Delegates, recently proposed that all doctors abide by the presently stated law; and

WHEREAS, the Traffic Safety Committee and the Council have, it seems, inadvertently, ignored the direction of the House of Delegates; now, therefore, be it again

Resolved: That the Traffic Safety Committee of California Medical Association be directed to study the problem of Epilepsy as a reportable disease, to seek methods to make any reporting of medical conditions, including alcoholism, as well as epilepsy, equitable and nondiscriminatory.

ACTION: Adopted by House.

* * *

ACCREDITED INTERNS AND RESIDENTS IN NON-UNIVERSITY HOSPITALS

Resolution No. 87.

Authors: Thomas N. Foster and C. Gerald Scarborough.
Representing: Santa Clara County Medical Society.

WHEREAS, there are independent County hospitals in California with excellent case material and Visiting Staffs capable of training of Interns and Residents in patient care; and

WHEREAS, a shortage of such Doctors is evident and increasing in many parts of the country; and

WHEREAS, Accreditation Commission and Specialty Boards are forcing assimilation of these programs into University programs, thus decreasing the ultimate number of programs and Doctors trained in patient care; now, therefore, be it

Resolved: That the C.M.A. and its delegates to A.M.A. continue efforts to support independent teaching programs where properly conducted, in addition to University programs, so that the number of Doctors trained in patient care will be increased rather than decreased.

ACTION: Adopted by House.

* * *

C.P.S. REFERENCE COMMITTEE

Resolution No. 88.

Author: Leon P. Fox.
Representing: Santa Clara County Medical Society.

ACTION: Not adopted by House.

* * *

PRIVILEGED COMMUNICATION FOR PHYSICIANS

Resolution No. 89.

Author: Robert L. Dennis.
Representing: Santa Clara County Medical Society.

Resolved: That the House of Delegates of the California Medical Association recognizes the need for and advocates legislative action that will grant privileged communication between physicians and patients in matters pertaining to diagnosis, therapy, and patients' care.

ACTION: Adopted by House.

* * *

C.P.S.-COUNTY PREPAYMENT PLANS

Resolution No. 90.

Author: Thomas Elmendorf.
Representing: Butte-Glenn County.

WHEREAS, the House of Delegates of the California Medical Association has previously proclaimed the policy of local programs tailored to local needs for tax-supported medical care; and

WHEREAS, the Glenn County-C.P.S. prepayment contract for Welfare recipients is a successful implementation of such policy; and

WHEREAS, other counties are currently attempting to establish their own local programs; and

WHEREAS, there are indications that the State Department of Social Welfare desires to discontinue the Glenn County-C.P.S. program as well as look with disfavor upon other local proposed programs; now, therefore, be it

Resolved: That

1. The House of Delegates reaffirm its previously avowed policy of local programs tailored to local needs.

2. Instruct the Council of the California Medical Association through its appropriate committees to exert maximum effort to execute this policy.

ACTION: Adopted by House.

* * *

MEDICAL CARE OF THE AGED

Resolution No. 91.

Author: Allan K. Briney.

Representing: Executive Committee, L.A.C.M.A.

WHEREAS, the President of the United States considers Medical Care of the Aged under Social Security as his number one domestic affairs issue, and

WHEREAS, the President will deliver a major address on this subject from Madison Square Garden in New York on May 20, and

WHEREAS, the tenor of his address can well be anticipated, therefore, be it

Resolved: That the California Medical Association take immediate steps to encourage the American Medical Association to present the Edward Annis, M.D., film on a national television network program on May 20, 1962, following the President's address; and be it further

Resolved: That the California Medical Association sponsor the showing of this film on television to obtain statewide coverage following the President's address on May 20, if the American Medical Association does not comply with this resolution; and be it further

Resolved: That the California Medical Association encourage County Associations to inform the public in their county of the Edward Annis, M.D., program.

ACTION: Adopted by House.

* * *

EMERGENCY RESOLUTION

Author: Samuel R. Sherman.

Representing: The Council.

WHEREAS, California is highly honored from time to time by the election of one of its physicians to the highest office that American medicine can bestow, namely, the presidency of the American Medical Association; and

WHEREAS, this great honor has not heretofore been recognized in its proper magnitude by this House of Delegates; now, therefore, be it

Resolved: That the House of Delegates of the California Medical Association hereby declares that all former presidents of the American Medical Association from California who are not officially designated as members of this House of Delegates shall be declared as Honorary Past Presidents of the California Medical Association and be cloaked with all the honors and privileges granted to past presidents of this association; and be it further

Resolved: That the designation of Honorary Past President be conferred forthwith on Doctor Dwight H. Murray.

ACTION: Adopted by House.

AMENDMENTS TO CONSTITUTION

Amendments to the Constitution of the California Medical Association are required to lie on the table for one year before being voted upon.

Seven such amendments were introduced in the 1961 House of Delegates and thus were subject to vote in 1962. The 1961 amendments and the actions taken upon them follow:

1961 AMENDMENTS

CONSTITUTIONAL AMENDMENT No. 1

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Article I, Section 5, of the Constitution of the California Medical Association shall be amended, by adding a new sentence at the end of the present section reading as follows:

"Notwithstanding the foregoing, one charter may be issued to a component society that is not limited as to geographical area or which overlaps the area covered by one or more existing component societies."

ACTION: Adopted by House.

* * *

CONSTITUTIONAL AMENDMENT No. 2

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Article III, Part B, Section 10, of the Constitution of the C.M.A. shall be amended by deleting the word "ten" in the first sentence of the section and substituting therefor the word "eleven" and by adding the following sentence as a separate subparagraph of said section:

"District No. 11, consisting of any society which is not limited as to geographical area, or the area of which overlaps the area covered by one or more existing component societies; such society and its members shall not be considered to be members of any other councilor district."

ACTION: Adopted by House.

CONSTITUTIONAL AMENDMENT No. 3

Author: James MacLaggan.
Representing: San Diego County.

ACTION: Not adopted by House.

* * *

CONSTITUTIONAL AMENDMENT No. 4

Author: Los Angeles delegation.

ACTION: Not adopted by House.

* * *

CONSTITUTIONAL AMENDMENT No. 5

Author: Alameda-Contra Costa delegation.

Resolved: That Article IV, Section 3 of the C.M.A. Constitution be amended to read: "The Council, on recommendation of a component society, may grant leaves of absence to active *and associate members* who are seriously ill, etc. . . ."

ACTION: Adopted by House.

* * *

CONSTITUTIONAL AMENDMENT No. 6

Author: Jerome Klingbeil.
Representing: Los Angeles County (Long Beach).

Resolved: That the California Medical Association initiate changes in its Constitution and Bylaws which will permit any established district of a county society to withdraw from that county society and become a direct component part of the California Medical Association; and be it further

Resolved: That the California Medical Association amend its Constitution and Bylaws as follows:

A. ARTICLE I, SECTION 4—Definition of Component Societies

Component societies include all county medical societies (which may cover one or more counties) or any established component district of at least 300 members of a county society which has exercised option to withdraw from that county society and set up a separate component society, heretofore or hereafter, chartered by this Association.

(B.—See ACTION below.)

C. ARTICLE III, SECTION 7(a)—Issuance and Revocation of Charters

The House of Delegates shall issue charters to medical societies of any county, any component society of at least 300 members which has exercised its option to become autonomous or to any group of counties deemed eligible which have made proper application therefor.

ACTION: Paragraphs A and C were adopted by House; Paragraph B, on component society charters, was not adopted by House.

CONSTITUTIONAL AMENDMENT No. 7

Author: Ian Macdonald.
Representing: Los Angeles County.

ACTION: Not adopted by House.

1962 AMENDMENTS

Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. They were reviewed by Reference Committee No. 4 of the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 of the 1963 House. In certain instances the 1962 Reference Committee made certain specific recommendations which were adopted by the House.

CONSTITUTIONAL AMENDMENT No. 1

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article I, Section 3 of the Constitution of the California Medical Association as now written be deleted and this section to read as follows:

"This Association is an organization composed of the component medical societies and their members, the House of Delegates, the Council, the Scientific Board, the Scientific Assembly, Bureaus, Commissions and Standing Committees."

* * *

CONSTITUTIONAL AMENDMENT No. 2

Author: Samuel R. Sherman.
Representing: the Council.

Resolved: That Article III, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio with the right to vote, eighteen (18) members of the Scientific Board selected as provided in the Bylaws, and"

The present subsection (d) shall be redesignated (e).

* * *

CONSTITUTIONAL AMENDMENT No. 3

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article III, Part B, Section 9, of the Constitution of the California Medical Association shall be amended by inserting a new subparagraph (c) and redesignating the present subparagraph (c) as (d), and the present subparagraph (d) as (e). The new subparagraph (c) shall be inserted immediately after subparagraph (b) and shall read as follows:

"(c) One (1) member of the Executive Committee of the Scientific Board to be elected by the Executive Committee of that body from representatives of the scientific sections or members-at-large."

* * *

CONSTITUTIONAL AMENDMENT No. 4

(Printed with Action following Constitutional Amendment No. 5)

* * *

CONSTITUTIONAL AMENDMENT No. 5

Author: Dwight L. Wilbur.

Resolved: That Article III, Part A, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio, with the right to vote, the members of the Scientific Board, and"

The present subsection (d) should be redesignated as (e).

ACTION: The House adopted a motion directing the Council to appoint a committee to make a study and submit a report to the delegates and alternates at least thirty days before the next annual meeting concerning the membership requirements, voting procedures and organization of the scientific sections contemplated in Constitutional Amendments Nos. 1, 2, 3 and 5.

* * *

CONSTITUTIONAL AMENDMENT No. 4

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsive to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Constitution of the C.M.A., Article III, Part B, Section 11, be amended to read as follows:

"SECTION 11—Election of Councilors

"District Councilors shall be elected by the vote of the members, entitled to vote, from each District, in the manner and at the time specified in the Bylaws."

and be it further

Resolved: That the Bylaws of the C.M.A. be amended to provide for the election of District Councilors in accordance with this Constitutional amendment.

ACTION: Constitutional Amendment No. 4 (together with Bylaw Amendment No. 12 printed under 1962 Bylaw Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

CONSTITUTIONAL AMENDMENT No. 6

Author: Allyn J. McDowell.

Representing: Los Angeles.

Resolved: That the Constitution of the California Medical Association be amended by adding to Article I, Section 2, the following:

"This Association shall not have the right to enter into a contract with any person, firm, or agency of any kind with respect to the practice of medicine or fees for such practice."

BYLAW AMENDMENTS

Four proposed amendments to the Bylaws introduced in the 1961 House of Delegates were, on recommendation of the Reference Committee and vote of the House, deferred for consideration until 1962.

The Reference Committee also suggested that a special committee be established to review all such deferred amendments. This committee was established by the Council and reviewed all amendments to the Constitution and Bylaws which related to the structure of the Association.

Shown below is the action taken on all proposed amendments to the Bylaws introduced in 1961 and deferred for action in 1962.

* * *

1961 BYLAW AMENDMENTS

BYLAW AMENDMENT No. 1

Author: Samuel R. Sherman.

Representing: The Council.

ACTION: Withdrawn by author.

* * *

BYLAW AMENDMENT No. 6

Author: James MacLaggan.

Representing: San Diego County.

ACTION: Not adopted by House.

* * *

BYLAW AMENDMENT No. 10

Author: Los Angeles delegation.

ACTION: Not adopted by House.

* * *

BYLAW AMENDMENT No. 15

Author: Los Angeles delegation.

ACTION: Not adopted by House.

1962 BYLAW AMENDMENTS

A total of 14 amendments to the Bylaws was offered to the 1962 House of Delegates. Bylaw amendments may be acted upon after lying on the table for 24 hours, hence all these were eligible for vote at the second meeting of the House.

However, in two instances the House voted that certain Bylaw amendments be referred to a special ad hoc committee for study and voted on in 1963.

Shown below are all amendments to the Bylaws introduced this year, with a report of the action taken by the House.

* * *

BYLAW AMENDMENT No. 1

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter II, Section 10, Subsections (c) and (d), and Chapter III, Sections 1, 2, 3 and 4 of the Bylaws of the California Medical Association shall be amended as follows:

Chapter II, Section 10

This section is presently entitled: "Termination of Membership." Its title shall be amended to read: "Termination, *Suspension or Probation* of Membership."

Section 10, Subsection (c), is presently entitled: "By Revocation of Physician and Surgeon's Certificate." This title shall be amended to read: "By Revocation, *Suspension or Probation* of Physician and Surgeon's Certificate." A sentence shall be added at the end of the present subsection to read as follows: *"Receipt of written evidence that the Board of Medical Examiners has found a member guilty of a disciplinary charge but has suspended judgment and placed him on probation for a stated length of time, shall thereupon cause the member to be a probationary member of the Association for a concurrent period of time."*

Section 10, Subsection (d), shall be amended by inserting the word "probation" after the last comma. The last part of that section would then read: ". . . shall be subject to censure, *probation*, suspension or expulsion from his society by such component society."

Chapter III, Section 1—Disciplinary Procedure for Component Societies

The opening sentence shall be amended to insert the word "probation" after the first comma. It would then read: "The procedure to be followed by each component society with respect to the censure, *probation*, suspension or expulsion of a member shall be:"

Subsection (2)(b)—Creation of Judicial Councils; Secretary's Duties; Preparation of Charges to Judicial Council

This subsection shall be amended by adding the following language at the end thereof: "In any component society having 200 or less active members, the governing board may find that in an unusual case it is unable to act as a Judicial Council because of close personal or professional involvement of members of the Judicial Council with the accused or that the facilities and personnel available to the society are inadequate to impartially and effectively investigate, present and decide an involved or complicated complaint. The governing board may pass a resolution setting forth the facts and request the California Medical Association councilor representing the district in which the county society is located, and the California Medical Association Council, to appoint a five-man district Judicial Council to hear the particular pending case or cases, and ask the California Medical Association to provide staff and financial assistance to investigate and present the case for the county society. Three members of the district Judicial Council shall constitute a quorum. In such instances, the charges shall be served or mailed in the same manner as is provided for a regular county Judicial Council proceeding, however, the district Judicial Council chairman shall be consulted concerning the fixing of the time, date and place of hearing."

Subsection (2)(d)

This subsection shall be renumbered subsection (2)(c).

Subsection (2)(c)

This subsection shall be renumbered subsection (2)(d).

Subsection (3)

The present subsections (3) and (4) shall be repealed and there shall be substituted, a new subsection numbered (3), entitled: *"Service of Charge Upon Accused and Fixing Time and Place of Hearing."* This section shall read as follows:

"If the Judicial Council determines that further action, with respect to said charges, shall be taken, the Council must fix a time and place for a hearing of said charges. Within fifteen (15) days after such decision, a copy of the charges, together with a written notice of the time and place for the hearing, shall be served upon the complainant, the accused and the Judicial Commission of the California Medical Association. Personal delivery or notice by registered mail shall be addressed to the accused either at his last known office or last known residence.

"The time so set for a hearing shall be not less than fifteen (15) days after the accused has been served as aforesaid, with a copy of the charges and with the notice of the time and place set for the hearing; said hearing must be held within the county in which the accused holds his county society membership. The hearing before the Judicial Council must actually commence within six months from the date of the filing of written charges. Failure to comply with this requirement shall constitute an automatic dismissal of the charges.

"The Judicial Council shall formally recognize who will prosecute the complaint or appoint someone to do so and grant the appointee necessary authority to make appropriate investigation and obtain help of counsel where needed. It shall be the duty of any member of the Association requested to testify to do so. Failure to testify without an excuse satisfactory to the Judicial Council shall be considered unprofessional conduct."

SUBSECTION (4)

New subsection (4) shall be entitled: "*Appointment and Duties of a Referee,*" and shall read as follows:

"The Judicial Commission of the California Medical Association *when it receives a copy of the notice* that a disciplinary proceeding is pending before any component society, may of its motion, and shall upon the request of such component society or of the member or members thereof the subject of any such disciplinary proceeding, appoint a referee who may, but need not be, a member of the California Medical Association, and shall cause the secretary of the California Medical Association to notify the secretary of such component society of such appointment. The referee so appointed shall preside at the hearing of said charges and shall make all decisions concerning the admission or rejection of testimony or other evidence and procedure. The referee shall not, however, have any voice nor participate in any manner in the determination by the Judicial Council of the disposition of the charges. During the hearing the referee shall perform all duties normally performed by the presiding officer of the Judicial Council."

SUBSECTION (5)—Right of Accused to Answer; Time to Answer; Formal Requirements

The following statement shall be inserted at the end of this subsection: "Failure of the accused to appear or be represented at the hearing may be considered prima facie evidence of the truth of the charges. When clear and convincing proof of them is presented, a verdict may be rendered. The accused may be represented by another member of the Association or by legal or other counsel."

SUBSECTION (6)

The previous subsection (6) is repealed and this new subsection shall be entitled: "*Rules Governing Hearing.*"

Present subsections (10) (c) entitled: "Technical Rules of Evidence Not to Govern Disciplinary Hearings," and (10) (d) entitled: "Members Agree That No Cause of Action Shall Accrue," shall become subsections (6) (a) and (b) and read as follows:

"(*a*) Technical Rules of Evidence Not to Govern Disciplinary Hearings. All hearings with respect to the disposition of charges against a member of a component society shall be held and conducted in such manner as to ascertain all the facts fairly to the accuser and accused, eliminating all formal or technical rules and requirements which ordinarily pertain to judicial proceedings."

"(*b*) Members Agree That No Cause of Action Shall Accrue. Any person so charged, censured, suspended, or expelled shall have no claim or cause of action against this Association, a component society or any member, director, councilor or officer, thereof by reason of such charges, or the hearing or the consideration thereof or censure, suspension or expulsion therefor."

Subsection (6) (c) shall be entitled: "*Challenge or Disqualification of Council Member,*" and read as follows:

"The accused shall have the right at the beginning of the hearing to challenge the impartiality of any member of the Council and may exercise this right by stating to the referee the name of the person challenged and the reasons for the challenge. Any member of the Council may disqualify himself to hear a particular case by informing the referee that he believes there exists substantial reason in his own mind that would prevent him from being completely impartial and objective in his consideration of a particular case. In both such instances, the official record should reflect that the referee granted the challenge or the request to be disqualified."

Subsection (6) (d) shall be entitled: "*Record of Proceedings*" and shall read as follows:

"A record of the hearing proceedings including the testimony, documents and rulings shall be made either by a competent shorthand reporter or by recording equipment, if agreeable to both parties. The expense of recording the proceedings shall be borne by the county society except in those cases referred to in subsection (2) (b) where a county society requests the appointment of a district Judicial Council and asks for financial assistance from California Medical Association. The typewritten transcript of the testimony, the documents introduced and the written decision of the Judicial

Council shall constitute the record of the entire proceedings. The secretary shall, upon receipt from the accused of a sum sufficient to defray the proportionate cost thereof, cause a copy or copies of such record to be transcribed, certified and furnished to the accused."

Subsection (6)(e) shall be entitled: "*Right of Parties to Be Heard*," and shall read as follows:

"The Judicial Council shall give ample opportunity both to the accuser and the accused to be heard in person and to present all testimony, evidence, or proofs which the accuser or the accused may deem necessary, provided that the Council may reject all testimony, evidence, or proofs, which in the judgment of the Council are immaterial, irrelevant or unnecessarily repetitious.

"Both parties shall be allowed necessary time to present the matter in an orderly fashion. The complainant or the society or the person appointed by the Judicial Council shall first present the facts in support of the complaint starting with a copy of the charges, together with a statement of all relevant facts concerning the fixing and calling of the meeting and the mailing of the notice to the accused, and any answer that has been filed. A copy of the charges and any documentary evidence to be introduced shall be made available to all parties concerned and the members of the Council. The referee may allow any witness to be reasonably cross-examined. Questions aimed at clarifying or establishing essential details may be asked by the Council. An equal opportunity to present testimony and documents to answer or explain the charges shall be allotted the accused. After the initial presentation of the facts by each side, opportunity shall be afforded for any necessary rebuttal. After all questions have been satisfied, the Council may ask each side to give a brief summary of the essential facts. If further pertinent written information would be helpful to the Council, they may request it."

SUBSECTION (7)—Decision of Council; When Must Be Written; Rules Governing Vote of Council

This new subsection shall take the place of the previous subsection (7) and shall read as follows:

"A simple majority shall constitute a quorum. A member of the Judicial Council not present at the hearing for the entire time shall not be entitled to vote with respect to the disposition of the charges or be considered part of the quorum. Appropriate recesses or adjournment of the hearing may be permitted by the referee.

"The Judicial Council, by at least a two-thirds affirmative vote of all members present at the hearing for the entire time, may vote to exonerate or to censure, suspend, place on probation or expel the accused member if he be found guilty of one or more of the charges presented. Prior disciplinary action may not be considered in determining whether the accused is guilty of one or more of the charges, but may be considered in assessing an appropriate sanction. Ordinarily, the action taken may be expressed in the form of a resolution. The vote may be taken by written ballot or by roll call. Failure of two-thirds of those eligible to vote to agree as to guilt shall act automatically as a dismissal of the charge. The Judicial Council shall render its decision as to guilt in writing not more than thirty days after the close of the hearing or the receipt of all supplementary written information requested by it. The written decision shall briefly and clearly set forth the particular acts, conduct or omissions for which an accused is found guilty.

"Within ten days after the decision of the Judicial Council is rendered, the secretary to the Judicial Council shall transmit a copy of the decision to the accused, the secretary of the society and the secretary of this Association."

SUBSECTION (8)—Suspension; Reinstatement of Suspended Member; Probation

This new subsection (8) shall repeal and take the place of the previous subsection (8) and shall read as follows:

"A censure shall consist of an oral or written admonition and imposition of appropriate restrictions.

"A member may be suspended by imposing a limited period, not to exceed five years, during which he shall have no rights or privileges to vote, hold office and participate in the activities of the society. Recommendations to the county society Executive Committee concerning eligibility for society insurance benefits and payment of dues shall be specifically made in the decision of the Judicial Council in each case.

"The Judicial Council may impose a fixed period of probation or defer the effective date of a suspension or expulsion. The conditions of probation and the privileges of membership during probation shall be fixed by the decision of the Judicial Council.

"If the accused violates any of the conditions of probation or of suspension, the Judicial Council may terminate the probation and order the suspension or expulsion to become effective on a date specified.

"At the end of the probation or suspension, on application of the disciplined member, the Judicial Council shall consider the quality of his behavior during his suspension or probation, and shall determine whether he shall be reinstated to membership in good standing or the period of suspension or probation extended. This decision of the Judicial Council may be voted, expressed and distributed in the same manner as is provided for the original decision.

"After the expiration of one year from the date of termination of membership, application for election to membership may be made to the society in the same manner as a new applicant for membership."

Subsection (9)—Judicial Council's Decision Final; Subject to Appeal

This new subsection (9) shall repeal and take the place of the previous subsection (9), and shall read as follows:

"The decision of the Judicial Council shall become final and effective ten days after the expiration of the time limit within which an appeal may be taken to the Judicial Commission of the Association. Filing an appeal with the secretary of this Association shall automatically stay the execution of the decision of the Judicial Council until written notice of the action of the Judicial Commission of this Association with respect to the appeal has been received by the secretary of the component society from which the appeal is taken."

Subsection (10)

Subsection (10) shall be repealed.

Chapter III, Section 2—Procedure for Appeal to Judicial Commission

The first and second sentences of this section shall be deleted and the following inserted:

"A member of a component society censured, probated, suspended or expelled by his county society may appeal from the action of such component society to the Judicial Commission of this Association within the period of two months succeeding the date of such censure, probation, suspension, or expulsion. Appeals shall be in writing and be filed in the office of the secretary of the Judicial Commission at the California Medical Association office, specifically setting forth the procedures, findings, conclusions or disciplinary action or any part thereof that is questioned or challenged. Those matters not challenged will be presumed to be admitted as factual and reasonable."

The third sentence beginning: "Said appeal shall be accompanied by . . ." and all that follows shall remain as is.

Chapter III, Section 3—Rules Governing Appeals

After the present first sentence, the following sentence shall be added: "The appellant may be represented by counsel and may submit oral and written material in support of the matter specifically questioned or challenged in his appeal. The county society representative and its counsel may appear in support of the decision of the Judicial Council and may submit written and oral statements."

The second sentence and all that follows in this section shall remain as is.

Chapter III, Section 4

There shall be adopted a new section 4, entitled: *"Investigations and Opinions Concerning Application of the Principles of Medical Ethics,"* to read as follows:

"In addition to the powers granted to Judicial Councils in section 1 of this chapter, and to the Judicial Commission in sections 2 and 3, to review specific charges against individuals, they shall have the power to investigate and supervise the ethical professional deportment of the membership of the Association and shall make periodic recommendations for improvement of professional conduct and interpret the meaning and application of the Principles of Medical Ethics. Appropriate investigation or study may be initiated by a formal complaint or by a Judicial Council or the Judicial Commission. The final recommendations should be submitted in the form of a report or bulletin.

"After approval by the appropriate county society executive board or the Council of the California Medical Association, the findings and recommendations shall be binding on all members of the Association after they are published in the official county bulletin or journal of the Association."

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 2

Author: Samuel R. Sherman.

Representing: The Council.

ACTION: Withdrawn by author.

* * *

BYLAW AMENDMENT No. 3

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Chapter V, Section 2, of the Bylaws be amended to read:

"Commencing with the 1964 regular session of the House of Delegates, each component society shall be entitled to two delegates plus one delegate for each 100 active members or major fraction thereof, exclusive of the first 100, according to its membership as of the first day of September of the preceding year. Every six years subsequent to 1964 the Council of the California Medical Association shall automatically review the size of the House of Delegates and make appropriate recommendations."

ACTION: Adopted by House.

BYLAW AMENDMENT No. 4

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 1, Subsection (a), Item 2, of the Bylaws be amended to read as follows:

“2. Committee on Aging *and Related Health Facilities.*”

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 5

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 9, subsection (a) of the Bylaws be amended by adding the following paragraph to the present subsection (a):

“It shall refer for investigation and review to the Committee on Mediation and Medical Care Insurance all complaints received from medical societies in which the component society requests a review by the committee or any case where the component society finds it is unable or unwise for its mediation committee to review the case. Orderly procedures to carry out this function shall be established. The findings and recommendations of the committee concerning each case reviewed shall be reported to the component medical society, the parties to the dispute, this commission and the Council.”

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 6

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 1, of the Bylaws be amended by deleting therefrom the present subsection (d) and substituting therefor the following:

(d) *Bureau on Communications*, responsible for the activities of and through which shall report such committees as may be named by the Council to function in activities bearing on the relations of the Association with its own members and with other individuals or organizations.”

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 7

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter V of the Bylaws be amended by adding thereto a new Section 13, to read as follows:

“13. Introduction of Business

“All business to come before the House of Delegates shall be presented in writing and shall be sent to the Secretary at the headquarters office at least 30 days in advance of the first meeting of any session. The Secretary shall then send copies of all such business to the members of the House of Delegates at least 15 days in advance of the first meeting.

“Business which is not presented within this time limit may be presented in writing to the Secretary as late as seven days before the first meeting of the House of Delegates. Copies of such business shall be made available to the members of the House of Delegates in advance of the first meeting.

“Any business presented less than seven days before the first meeting shall be reviewed by the Council and, if found to be of an emergency nature, shall be approved for introduction into the House of Delegates.

“Any business presented on the floor of the House of Delegates shall be referred to a special committee of the House of Delegates, to be appointed by the Speaker and to consist of at least five members of the House of Delegates, which shall review such business and, if approved, recommend its introduction as emergency business.”

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 8

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 3, Subsection (c) of the Bylaws be amended by the deletion of the last sentence of that Subsection, which reads:

“. . . . The members of the Commission on Public Policy shall be selected from the members of the Committee on Legislation and the members of the Committee on Public Relations.”

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 9

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 9, Subsection (d) of the Bylaws be amended by deleting therefrom the present Subsection (d) and substituting therefor the following:

“(d) The Bureau on Communications shall study, investigate, and conduct approved association activities concerning communications and relations between the public and the medical profession and within the profession itself. It shall allocate to various committees for which it may be responsible particular projects within their respective fields. It shall direct and coordinate the activities of its committees."

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 10

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter VII, Section 1, be amended by deleting subsections (e) and (f) and by redesignating the present subsection (g) as (e) and the present subsection (h) as (f); and be it further

Resolved: That Chapter VII, Section 9 be amended by deleting subsections (e) and (e)(1) and redesignating subsection (f) as (e).

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 11

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter IV of the Bylaws of the California Medical Association shall be amended by repealing the present Chapter IV and inserting in its stead the following:

"CHAPTER IV—SCIENTIFIC AND EDUCATIONAL ACTIVITIES OF THE ASSOCIATION

"SECTION 1—Scientific Board

"The Scientific Board shall be responsible for all educational and scientific activities of the Association including the annual and other scientific assemblies, continuing medical education, the Association's official journal, CALIFORNIA MEDICINE, and shall serve as a source of scientific information for members of the Association, the House of Delegates, the Council, commissions and committees of the Association, and the public.

"(a) Composition. It shall be composed of thirty-six (36) members chosen in the following manner:

"(1) One (1) member from each of the currently constituted scientific sections of the California Medical Association—(18).

"(2) Eighteen (18) members-at-large having as broad a representation as practical from the various categories of medicine.

"The Council, on recommendation of the Scientific Board and others, shall name the scientific disciplines to be included in the various categories, and the organizations or groups which may nominate members-at-large to the Board.

"Each scientific section and each named member-at-large organization or group, shall present at least three (3) names in nomination to the Nominating Committee of the Board. The Nominating Committee shall recommend two (2) names from each section and each member-at-large category to the Executive Committee of the Board and to the Committee on Committees of the Council. Election to membership on the Board shall be made from these nominees by the Council.

"In addition to the above, two (2) members of the Council shall be nominated each year to serve as members of the Scientific Board.

"The editor of CALIFORNIA MEDICINE shall be an ex-officio. nonvoting member of the Scientific Board.

"(b) Term of Office. The term of office for the members of the Scientific Board shall be three (3) years with eligibility for reelection, except that the initial terms of office, when the Board is created, shall be for lesser terms to establish the rotation of one-third (1/3) of the Board's membership each year.

"The initial Board shall be selected from the nominations made by the eighteen (18) scientific sections and the categories and groups named as members-at-large, by a special committee of the California Medical Association appointed for this purpose by the chairman of the Council. One-third (1/3) of the initial terms of office shall be for one (1) year; another one-third (1/3) for the two (2) years; and a final one-third (1/3) for three (3) years. The length of term of each of the initial appointees shall be determined by lot.

"(c) Meetings of the Scientific Board. The Scientific Board shall meet annually at the time of the Annual Session of the House of Delegates and the Scientific Assembly. Other meetings of the Board may be held on call of the majority of the members of the Executive Committee of the Board.

"(d) Representation in House of Delegates. The Scientific Board shall name eighteen (18) of its members as ex-officio delegates to the House of Delegates to be chosen in the following manner:

"Nine (9) members shall be chosen from the scientific sections, and nine (9) members shall be chosen from the members-at-large. Not more than one (1) representative shall be chosen from any scientific discipline listed in the Bylaws as a scientific section. When there are two (2) or more members on the Scientific Board from the same discipline, the senior member in term of service on the Board shall serve as the member of the House of Delegates representing that discipline from the Board. When the terms of service of two (2) or more are equal, then the one to serve representing that discipline shall be determined by lot. The initial membership in the House of Delegates from the Scientific Board shall be determined by a special committee appointed for this purpose by the chairman of the Council.

"The Bylaw provision concerning notification to the secretary of the Association of the names and addresses of delegates shall be followed.

"SECTION 2—Committees of the Scientific Board

"(a) Executive Committee. The Executive Committee shall consist of seven (7) members from the Scientific Board including the chairmen of the committees on Continuing Medical Education and on Scientific Assemblies, (but no more than two (2) members from any one discipline), two (2) members from the Council designated annually by the Council, and the editor of CALIFORNIA MEDICINE as an ex-officio member without the right to vote.

"This shall be a working committee carrying out the usual functions of an Executive Committee, which shall meet on call of the chairman, any three (3) members of the committee, chairman of the Council or the president of the Association.

"(b) The Committee on Continuing Medical Education. The Committee on Continuing Medical Education shall consist of five (5) members from the Scientific Board including the chairman of the Committee on Scientific Assemblies. No more than one (1) member from any discipline shall be appointed. The directors of Continuing Medical Education of the medical schools in California shall be invited to sit as consulting members, (nonvoting), of this committee.

"The functions of this committee shall be:

"(1) Responsibility for all activities of continuing medical education, postgraduate courses, coordination of educational activities with medical schools, other societies, organizations and industries.

"(2) To study and implement recommendations made by the Committee on Scientific Assemblies.

"(3) To study and recommend programs for education and continuing education of those in allied health professions and services.

"(c) Committee on Scientific Assemblies. The Committee on Scientific Assemblies shall consist of nine (9) members from the Scientific Board, one (1) of whom shall be chairman of the Committee on Continuing Medical Education.

The functions of this committee shall be:

"(1) The long-term planning and implementation of scientific meetings.

"(2) To determine the character and scope of the scientific proceedings of the Association for each Annual Session, and to invite the guest speakers, subject to the instructions of the Council.

"(3) It shall act as the Committee on Arrangements for the Annual Session and have charge of all local arrangements not otherwise provided for. It shall have power to appoint local advisory members and subcommittees to aid in its work.

"(4) To have at least one joint session with the section secretaries, at a time and place to be designated by the chairman of the committee, at least forty-five (45) days prior to the Annual Session, to coordinate more efficiently the various activities of the Association at its Annual Session.

"(5) To ensure that if a postgraduate course is to be given at the time of the Annual Session, it shall be given with the approval of the Committee on Continuing Medical Education and the Committee on Scientific Assemblies, and be integrated with the program of the Scientific Assembly.

"(6) At least thirty (30) days prior to each Annual Session, to prepare and issue a program announcing the order in which papers and discussions shall be presented.

"(d) Committee on Scientific Information. The Committee on Scientific Information shall consist of five (5) members from the Scientific Board.

"It shall serve as a source for obtaining and disseminating scientific information to members of the Association, the House of Delegates, the Council, commissions and committees, and the public.

"(e) Committee on CALIFORNIA MEDICINE. The Committee on CALIFORNIA MEDICINE shall consist of five (5) members from the Scientific Board.

"It shall serve in an advisory capacity to the editor and Editorial Board of CALIFORNIA MEDICINE.

"(f) Committee on Cancer. The Committee on Cancer shall consist of seven (7) members; at least three (3) of whom shall be members of the Scientific Board, and the remainder of whom shall be selected from the membership-at-large of the Association. The Committee on Cancer shall be responsible for the activities of this Association in the field of cancer research, prevention, education and control, through which the following standing subcommittees shall report:

"(1) Committee on Cancer Education.
"(2) Committee on Tumor Tissue Registry.
"(3) Committee on Consultative Tumor Boards.
"(4) Committee on New and Unproved Methods of Cancer Treatment.

"Each of these subcommittees shall be composed of five (5) members. The chairman shall be selected from the Committee on Cancer, and four (4) additional members shall be selected from the membership-at-large of the Association.

"(g) Committee on Maternal and Child Care. The Committee on Maternal and Child Care shall consist of nine (9) members, two (2) of whom shall be members of the Scientific Board representing Obstetrics and Gynecology, and Pediatrics, and seven (7) of whom shall be selected from the membership-at-large of the Association.

"(h) Committee on Nominations. The Committee on Nominations shall consist of three (3) members elected by the Scientific Board at the annual meeting of the Board to serve for one (1) year, eligible for reelection but once, and thereafter only after a one (1) year interval. The chairman of the Scientific Board shall nominate three (3) members and the Board-at-large shall nominate at least three (3) members for election to this committee.

"The functions of this committee shall be to receive and consider nominations for:

"(1) Membership on the Scientific Board from the various scientific sections and scientific organizations eligible to nominate members-at-large of the Scientific Board.

"(2) Membership on the committees of the Board.

"(3) Chairmen, vice-chairmen and secretaries of committees and subcommittees of the Board.

"The Nominating Committee, after consulting with the Executive Committee of the Board, shall recommend to the Committee on Committees of the Council two (2) nominations for each vacancy. The Council shall elect from these nominees, members to the Board and to the committees and subcommittees of the Board.

"Section 3—General Provisions Governing the Scientific Board, Its Committees and Subcommittees

"Except as specifically provided herein, the term of office for a member of the Board, a committee or subcommittee, shall be three (3) years, provided, however, that members of the Scientific Board shall not be appointed to a term on a committee for a length of time exceeding their term as a member of the Board.

"Members of the Board shall not serve simultaneously on more than three (3) committees of the Board.

"The provisions relating to procedures and annual reports applicable to California Medical Association commissions and committees shall be applicable to the Scientific Board, its committees and subcommittees, unless otherwise specifically provided for.

"Section 4—Scientific Sections

"(a) The Association shall be divided into eighteen (18) scientific sections as follows: Internal Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology, Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Pathology and Bacteriology; Dermatology and Syphilology; Psychiatry and Neurology; General Practice; Preventive Medicine and Public Health; Allergy; Eye; Orthopedics; and Physical Medicine.

"(b) Rules of Procedure of Scientific Sections. Each scientific section shall adopt rules of procedure for its own better government and work. Its officers shall be responsible for the proper keeping of records of scientific and business meetings.

"(c) Officers of Sections. The members of each section shall, at the regular Annual Session of the Association, elect a chairman and a secretary to serve for the term of one year.

"(d) Nominations to the Scientific Board. Each scientific section shall be represented on the Scientific Board by one (1) member who shall serve for a three-year term. Three (3) nominations shall be made for this appointment to the Nominating Committee of the Scientific Board. These nominations shall be made at the time of the Annual Session of the Association.

"(e) Program. Each of the sections may present a scientific program at the Annual Session of the Association, and its officers shall be responsible for the proper preparation of the same, and for the proper cooperation with other scientific sections or organizations in presenting a scientific program during the annual meeting.

"Section 5—Meetings and Registration at Annual Session

"The general meetings of the Association, the meetings of the House of Delegates, and the meetings of the Scientific Assembly and its sections at any session shall be held in the State of California at the same locality and in buildings as convenient of access, one to the other, as may be possible.

"Each member in attendance at any session shall register, after his right to membership has been verified by reference to the records of this Association. No member shall take part in any of the proceedings of any session until he has complied with the provisions of this section of the Bylaws.

"Section 6—Addresses and Scientific Papers at Annual Session

"The program at Annual Sessions shall be divided between general meetings and section meetings as the Council shall deem appropriate.

"At the general meetings, the president may deliver an address, and, with the sanction of the Council, other addresses and reports may be presented.

"Excepting the president's address and such other addresses and reports as the Council may determine, no address or paper shall occupy more than twenty minutes in delivery.

"No member, except by unanimous consent, shall speak more than once in the discussion of any paper nor longer than five minutes at any one time. This subsection of the Bylaws shall be printed on all programs of general and section meetings.

"All papers read before this Association shall be its property. Each paper, when it has been read, shall be deposited with the secretary of the section, by him to be promptly turned over to the secretary of the Association.

"Authors of papers read before this Association shall not cause them to be published elsewhere except with the consent of the Editorial Board."

ACTION: Adopted by House.

* * *

BYLAW AMENDMENT No. 14

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Chapter II, Section 3(b) of the Bylaws of the California Medical Association shall be amended by inserting after the second sentence of said Section 3(b) a new sentence to read as follows:

"A person holding a physician's and surgeon's certificate under the jurisdiction of the State Board of Osteopathic Examiners on or before September 30, 1962, who holds a degree of Doctor of Medicine issued to him by the College of Osteopathic Physicians and Surgeons (or its successor), and whose license to practice medicine and surgery is unrevoked and unsuspended, is eligible for election to active membership in a component society. However, in the event that a charter is outstanding to a statewide component society, none of such persons shall be permitted to join any component society other than the statewide component society, without the express consent of such statewide society."

ACTION: Adopted by House.

BYLAW AMENDMENTS FOR ACTION IN 1963

BYLAW AMENDMENT No. 12

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsible to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Bylaws of the C.M.A., Chapter VIII, Section 6 and Section 6.5 be amended to read as follows:

"SECTION 6—Election of District Councilors in Districts Having One or More Councilors

"The members of each component society shall elect the number of District Councilors to which the component society is entitled. At least sixty (60) days prior to the next scheduled session of the House of Delegates, the Secretary of each component society shall forward to the Secretary of the Association, on forms provided by the Association, the names and addresses of those District Councilors, so elected, and shall certify thereon, the term of service of each individual Councilor.

"District Councilors shall be elected, by the districts, at the same time and manner that Delegates and Alternates to the House of Delegates of the Association are elected by their respective component societies.

"Districts, in which Councilor vacancies are about to occur, shall, by secret ballot and majority vote, of the members of the district eligible to vote, and voting, elect a District Councilor to fill each vacancy, from such district, to serve for the ensuing term.

"Where new offices are created under the terms of Article III, Part B, Section 9(a) of the Constitution, each such new office shall be numbered serially with those already existing, and shall carry an initial term extending to the same date as has been previously established for offices in the same numerical sequence, heretofore established, and thereafter for a term of three (3) years."

and be it further

Resolved: That Section 6.5 of Chapter VIII of the Bylaws of the C.M.A. be repealed and stricken from the Bylaws.

ACTION: Bylaw Amendment No. 12 (together with Constitutional Amendment No. 4 printed under 1962 Constitutional Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

BYLAW AMENDMENT No. 13

Author: Allyn J. McDowell.
Representing: Los Angeles.

WHEREAS, the C.M.A. Bylaws have heretofore provided for a referendum vote of all the members only at the discretion of either the Council or the House of Delegates; and

WHEREAS, these two referring bodies constitute the very bodies concerning whose decisions any appeal of the members might be needed or sought; and

WHEREAS, it is inconsistent with democratic principles that members of this Association should thus in effect have no right of appeal concerning actions of the Council or House of Delegates; now, therefore, be it

Resolved: That Chapter XII, Section 1 be amended by adding the following:

"Any action taken by the Council or by the House of Delegates may be referred to all of the active members of the Association for their vote for or against repeal of such action if a petition requesting such a referendum is filed with the president of the Association within sixty days after the action is taken and if the petition is signed by a number of active members amounting to more than twice the number of voting delegates at the prior meeting of the House of Delegates. This number of petitioners shall constitute a referring body"; and be it further

Resolved: That Chapter XII, Section 2 be amended by adding the following:

"Whenever a referendum vote is initiated through a petition of appeal the petition shall name an active member as the initiator and that member shall have the privilege of selecting or composing a written argument of 1,000 words or less to be presented with the ballot on behalf of the petitioners."

ACTION: Referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next Annual Session.

CALIFORNIA MEDICAL ASSOCIATION

1963 annual meeting

Ambassador Hotel, Los Angeles, March 24-27, 1963

announcing: FIRST CALL FOR SCIENTIFIC EXHIBITS, MEDICAL MOTION PICTURES, SCIENTIFIC PAPERS

THIS IS YOUR MEETING . . . . PLAN TO PARTICIPATE

Do you have A SCIENTIFIC EXHIBIT? . . . A MEDICAL MOTION PICTURE? . . . Write now to the CMA Committee on Scientific Work, 693 Sutter Street, San Francisco 2, for *application forms* for Scientific Exhibits and Medical Motion Pictures. *Don't wait!* Completed application forms must be in this office soon so that space and time can be allotted.

⁂

do you have A PAPER you'd like to present to your colleagues? . . . Write to the appropriate **Section Secretary** . . . Don't delay . . . Do it today . . . Programs are being planned *now!*

SECRETARIES OF THE SCIENTIFIC SECTIONS

ALLERGY	Walter R. MacLaren, M.D.	696 East Colorado Street, Pasadena 1
ANESTHESIOLOGY	James S. West, M.D.	Box 8914, Los Angeles 8
DERMATOLOGY AND SYPHILOLOGY	Herbert L. Joseph, M.D.	1516 Napa Street, Vallejo
EAR, NOSE AND THROAT	William F. Baxter, M.D.	762 Altos Oaks Drive, Los Altos
EYE	James F. Kleckner, M.D.	3731 Stocker Street, Los Angeles 8
GENERAL PRACTICE	Herbert A. Halden, M.D.	383 West Joaquin Avenue, San Leandro
GENERAL SURGERY	David B. Hinshaw, M.D.	Room 9440, 1200 North State Street, Los Angeles 33
INDUSTRIAL MEDICINE AND SURGERY	Carl E. Nemethi, M.D.	5592 Santa Fe Avenue, Los Angeles 58
INTERNAL MEDICINE	Harney M. Cordua, Jr., M.D.	2561 First Avenue, San Diego 3
OBSTETRICS AND GYNECOLOGY	Leon P. Fox, M.D.	303 North 15th Street, San Jose 12
ORTHOPEDICS	Edwin G. Bovill, Jr., M.D.	450 Sutter Street, San Francisco 8
PATHOLOGY AND BACTERIOLOGY	Richard O. Myers, M.D.	Valley Presbyterian Hospital, 15107 Vanowen Street, Van Nuys
PEDIATRICS	Lawrence E. Reck, M.D.	2950 Sixth Avenue, San Diego 3
PHYSICAL MEDICINE	Frances Baker, M.D.	1 Tilton Avenue, San Mateo
PREVENTIVE MEDICINE AND PUBLIC HEALTH	Herbert Bauer, M.D.	Yolo County Health Department, P.O. Box 532, Woodland
PSYCHIATRY AND NEUROLOGY	Henry S. Colony, M.D.	411 30th Street, Oakland 9
RADIOLOGY	Walter Gaines, M.D.	120 St. Matthews Avenue, San Mateo
UROLOGY	Henry Bodner, M.D.	4911 Van Nuys Boulevard, Van Nuys

No. 10*

The Industrial "Blank Check"

No PHYSICIAN in his right mind would sign a financial agreement involving thousands of dollars without a thorough knowledge of its contents and implications. Yet, every day, California physicians submit industrial accident reports involving vast sums of money with hardly a second thought.

Standard forms or narrative reports concerning industrial injuries have important, unique characteristics. They are legal documents as well as medical records. They are often the sole basis on which large amounts of money are committed or actually paid in awards, litigation costs and disability payments. They may also have significant effect on the employment status of the insured worker.

Making initial reports accurate, clear and concise best serves the best interests of all parties. Anything less may result in confusion and injustice, and is, moreover, harmful to the reputation of the individual physician and of the profession.

Minimum requirements are:

1. The patient's statement of how the alleged injury occurred.
2. An accurate diagnosis—if this can be stated with assurance. The use of such terms as "aggravation" or "recurrence" is helpful in clarifying the relationship of the injury to pre-existing conditions. When exposure to irradiation or other harmful agent is alleged, but no immediate verification of exposure is available, "suspected exposure" should be stated in the report. *Any diagnosis that is not substantiated should be omitted.*
3. A precise statement of disability—both subjective and objective—with accurately stated measurements of function. The physician's own evaluation of the validity of the apparent disabling factors should be stated when indicated.
4. Realistic estimates of the duration of disability—total or partial. Overly optimistic prognostications cause unnecessary, costly reappraisals and are discouraging to the worker, to the employer and to his insurance carrier. Any anticipated permanent disability should be stated on *each* report and estimated with all possible accuracy.
5. An indication of the need for further treatment and the kind of treatment.
6. Finally—and important—the physician must sign the report himself. The responsibilities that the physician has to the patient, to the employer and to himself are too great to be delegated to an aide.

Don't be guilty of handing out "industrial blank checks." They *can* bounce—with most embarrassing consequences.

COMMITTEE ON OCCUPATIONAL HEALTH
CALIFORNIA MEDICAL ASSOCIATION

Comments and Questions Are Welcomed by the Committee

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* This is the tenth of a series of articles prepared by the Committee on Occupational Health.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

IN EIGHT of the ten years between 1950 and 1960, more cases of measles were reported in California than of any other communicable disease. During 1961, another relatively high measles year, 39.201 cases and 26 deaths were reported. The case-fatality ratio continues to be slightly less than one death for every 1.000 cases. Since measles is greatly under-reported. the true case-fatality rate is probably closer to one in 10,000.

Thirteen of these fatal cases were in children three years of age or under; 22 of the 26 were under 10 years of age and only four were over 10. It is interesting to note that in nine of 13 fatal cases complicated by pneumonia alone the patients were under five years of age. The reverse was true where encephalitis was the complication, nine of 13 were over the age of five years.

The prospect of effective live virus vaccine becoming generally available sometime in the near future gives hope that this important cause of sickness and death can soon be greatly reduced and eventually eliminated as a public health problem.

* * *

For almost five years, the California Medical Association and the State Health Department have been jointly studying all deaths of women that occur during or within 90 days of termination of pregnancy. Within this period, there have been 725 deaths meeting this definition, with review completed on 515 of them.

Of the maternal deaths studied to date, there have been over one hundred considered due to abortion. In at least 70 per cent of these cases the abortion was criminally induced. An additional number of the deaths are suspect but cannot unequivocally be assigned as a criminally induced abortion. Less than 15 per cent of the abortions were spontaneous. A few deaths were a result of attempted abortion in cases in which a woman mistakenly believed she was pregnant. These cases were not included in the study.

A preliminary investigation of the information collected on the abortion deaths studied to date revealed that almost two-thirds of the women were married, 15 per cent were never married and the remainder were widowed, divorced, separated or were of unknown marital status.

Less than 15 per cent of the women had never before been pregnant, while almost 30 per cent had had five or more pregnancies. Almost half of the women dying from abortion were 30 years of age or older. A detailed report on maternal deaths resulting from abortion is being prepared for later publication. Earlier findings of the maternal mortality study were published in the November. 1960, issue of CALIFORNIA MEDICINE.

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An unusual death occurred in Southern California when wild tobacco leaves were mistaken for collard greens. The plants were picked in the yard of a vacant house, washed, boiled with strips of bacon and served for supper to a family of four.

One hour afterward all four became dizzy and nauseated, vomited, and had difficulty swallowing, talking and seeing. Two of the four were ill enough to be hospitalized and one of them, a seven year old child, died within 12 hours. Symptoms lasted about 24 hours in those who recovered.

The offending plant was identified as wild tobacco. native to Argentina and brought to California by the Spanish padres. Its first leaves are cabbage-like with a greyish color. Hence the likelihood of confusing it with collard greens. In its mature form it has been mistaken for pokeweed, a wild plant sometimes cooked and eaten by persons in southern states.

LETTERS *to the Editor*

California Physicians' Service

You recently devoted the major portion of a large issue* to California Physicians' Service-Blue Shield. On behalf of the 20 or 25 per cent of our C.M.A. members who do not belong to C.P.S. may I ask your publication of this article on an equal or proportionate space basis.

C.P.S.—THE DOCTORS' PLAN

1. *Purpose:* C.P.S. was founded in 1939 to develop a method to distribute the cost of sickness service on a voluntary basis and "without injury to the standards of medical practice." Physicians were to be reimbursed on a unit basis, and it was hoped that the unit might amount to perhaps 80 per cent of the modest fee schedule then agreed upon. It was soon found that funds available would only pay at about 50 per cent on the unit. Revision of the program was accordingly made, and the House of Delegates repeatedly stressed the desirability of indemnity, rather than service-type coverage, at least for those above the lower income levels.

2. *Beneficiary Membership:* The beneficiary membership grew and today reportedly amounts to about one million persons. In addition, C.P.S. arranges the distribution of certain services for persons eligible for medical coverage under the Medicare and Public Assistance Medical Care programs. In one recent year its volume of business exceeded 57 million dollars.

3. *Professional Membership:* A majority of the physicians in the California Medical Association are reportedly professional members (about 80 per cent). However, it is noteworthy that in the two larger conurbations (San Francisco and Los Angeles) the professional membership is only a little over 70 per cent.

Further, the presidents of the three largest medical societies in the state, the San Francisco Medical Society, the Alameda-Contra Costa Medical Society and the Los Angeles Medical Society are not members. The chairman of the C.M.A. TV-Radio Committee is not a member. These persons vote in the House of Delegates of the C.M.A., which group doubles as the guiding body of C.P.S. As a result, we have distinguished physicians debating and voting on issues without themselves being involved directly. This conjures "Do as I tell you, don't do as I do."

4. Performance: For *beneficiary* members, C.P.S. has in general provided very good service—excellent surgical benefits, fair medical benefits and good hospital benefits—all with little or no added charge on the part of the patient (except in the higher income brackets). In accepting what are essentially substandard fees for many medical procedures, the profession is of course subsidizing C.P.S. to a very significant degree.

For physicians working in group practice, or in branches of medicine that permit large volume, "production-line" methods, the current C.P.S. allowances are often regarded as acceptable. However, for physicians in the nonsurgical branches of medicine (internists, pediatricians, nonsurgical generalists, radiologists) and others in solo practice, many allowances are so small that if a large majority of their patients were to be compensated for at C.P.S. rates, they would not be able to pay their office nurses and office rent. Since the public needs and deserves wide availability of private medical service, it would be desirable that medical (as opposed to surgical) allowances under C.P.S. were revised.

It is said that only about 7 per cent of our patients are currently covered by C.P.S. Even if only 1 per cent were so covered, and covered in a manner that set a *bad precedent for good quality* of medical care, it would be evil because, as the Doctors' Plan, C.P.S. is held a potential model for other insurance programs. Worse, it may be held as a model for eventual state or federal medical service. For this reason, it is doubly important that necessary corrections be made.

5. *Abuses:* C.P.S. pays grossly unequal fees for identical diagnostic procedures depending on whether they are performed in a hospital building or a medical building. It is estimated that hundreds of thousands of dollars are paid to hospital radiologists each year *in excess of payments* for identical procedures performed by well-qualified radiologists in medical office buildings.

C.P.S. pays and has paid literally millions of dollars *for medical services not rendered.* The radiology portion of the C.P.S. schedule allows for (a) expert examination by referral plus (b) independent consultation report. However, a majority of nonhospital radiology is reportedly performed by nonradiologists, yet C.P.S. has paid and still pays the full fee, even though no independent consultation is provided. These two wasteful procedures have been drawn repeatedly to the attention of the C.P.S. Trustees for some 21 years, without being corrected.

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*California Medicine, 94:156-172, March 1962.

When pressed, C.P.S. officials state that they cannot make the necessary changes, that the C.M.A. or one of its committees "must instruct it first." Well, C.P.S. makes frequent changes in contracts and benefits without specific House instruction. It could effect the necessary reforms by *administrative action.* It is doubtful if such action will ever be initiated by Trustees or Delegates since so many are recipients of largesse in the form of specialist radiology fees for non-specialist type radiology. This fact is unknown to some and ignored by others. *The public is the loser.* After all, there is no question as to the difference in quality and quantity between a G.I. Series performed by an experienced radiologist in a well-equipped office and one performed by a nonradiologist with "a cup of barium and a fluoroscope." Yet C.P.S. pays the same fee for either procedure! When the average G.P. himself needs a G.I. Series, where does he go? To the radiologist, as far as we can ascertain. And more power to him.

Correction of the abuses should result in availability of added medical funds. These could well be allocated to currently low portions of the schedule (such as medical office visits, internist and pediatric procedures).

6. *Comments:* Should the medical profession be in the insurance business? Should the profession, which believes in free enterprise, accept the shelter of a tax-free status such as C.P.S. possesses? Finally, should we compete with private enterprise (voluntary health insurance companies) by means of hidden subsidies, which some of the low medical fees of C.P.S. amount to?

A special committee of the Council of the C.M.A. studied this matter during 1961-62 and recommended as follows to the Council:

1. For income ceilings under $4200, a *service* plan with a relative value factor of 4.

2. For those under $6000, a *service* plan with a relative value factor of 5.

3. For those above $6000 an *indemnity,* or major medical, or usual fee program.

The Chairman of the Committee reported its opinion that C.P.S. *cannot and should not compete with closed panel plans.*

Summary: It seems that there are two main issues:

a. How can we maintain a good *quality* of medical care at reasonable fees for a majority of the public?

b. Who is going to control the economics of medical care?

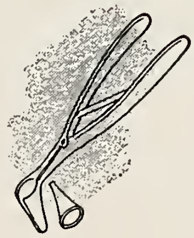
The answers include:

a. Good quality of medical care will be encouraged by aiding competent individual medical as well as surgical practitioners to survive. This means recognizing quality as well as quantity.

b. The economics of medical care can best be controlled by joint efforts of experts in the two fields: Good private insurance companies and conscientious physicians. I submit that the public will be better served if we, the doctors, stick primarily to the practice of our profession and encourage insurance companies to develop programs for those above the lower income ceiling levels. We may need to subsidize the low-income policies even more than we do now, but in the end we will be setting a safer precedent for general population "health insurance" coverage (which probably should involve coinsurance or reasonable deductible features).

Yours sincerely,

L. H. Garland, M.D.



In Memoriam

Bloomfield, Arthur L., San Francisco. Died July 5, 1962, in San Francisco, aged 74, of heart disease. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1911. Licensed in California in 1926. Doctor Bloomfield was a member of the San Francisco Medical Society.

✤

Booke, S. Gerald, Monrovia. Died June 28, 1962, in Monrovia, aged 61, of chronic congestive heart failure. Graduate of the University of Buffalo School of Medicine, New York, 1924. Licensed in California in 1925. Doctor Booke was a member of the Los Angeles County Medical Association.

✤

Brosemer, Lowell R., Sacramento. Died June 26, 1962, in San Francisco, aged 41. Graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1946. Licensed in California in 1947. Doctor Brosemer was a member of the Sacramento Society for Medical Improvement.

✤

Campbell, Walter Mac, Sacramento. Died June 15, 1962, in Sacramento, aged 57, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1934. Licensed in California in 1934. Doctor Campbell was a member of the Sacramento Society for Medical Improvement.

Huff, Lucius Johnson, Berkeley. Died February 9, 1962, in Berkeley, aged 89, of cerebral hemorrhage. Graduate of the University of Southern California School of Medicine, Los Angeles, 1905. Licensed in California in 1905. Doctor Huff was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✤

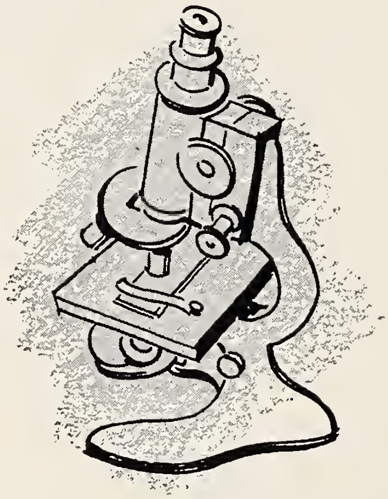
Jones, Newell, Encino. Died June 18, 1962, in Encino, aged 80. Graduate of Illinois Medical College, Chicago, 1905. Licensed in California in 1923. Doctor Jones was a member of the Los Angeles County Medical Association.

✤

Kohn, Frank, Tulare. Died June 18, 1962, in Tulare, aged 70. Graduate of the University of Nebraska College of Medicine, Omaha, 1923. Licensed in California in 1926. Doctor Kohn was a retired member of the Tulare County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Stabel, John Alois, Sacramento. Died June 14, 1962, in Sacramento, aged 64. Graduate of the Universitat Heidelberg Medizinische Fakultät, Baden, Germany, 1922. Licensed in California in 1926. Doctor Stabel was a member of the Sacramento Society for Medical Improvement.



WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Membership and Organization

MEMBERSHIP is the foundation of an organization. The structure of objectives and program resting upon it must be built by interested and enthusiastic workers. The President of the Woman's Auxiliary to the California Medical Association, Mrs. Floyd K. Anderson, has given us the following motto for the year 1962-63:

> "*Increase Membership*
> *Strengthen Friendship*
> *And let it begin with me.*"

Probably at no time in our history as an Auxiliary has it been more important that we endeavor to achieve such a goal. We recognize the fact that we are an Auxiliary and, therefore, the challenges and problems which face the Medical Association are also our challenges and our problems and that we must strive to assist in their solution. In order to grow in strength and influence we need to grow in numbers. We need every physician's wife as a member of the Auxiliary. And we believe that every physician's wife needs her membership in the Auxiliary.

Our potential for growth in membership in California is a real challenge. At the close of the year 1961-1962 we had 7,383 members in the state, an increase of 113 over the previous year. We are the largest State Auxiliary in the country. We also like to think we are the best. But there are over 17,000 doctors in the California Medical Association. Where are the nearly 10,000 Missing Wives! Most of them live in areas in which there are organized County Auxiliaries. We have 34 County Auxiliaries, ranging in size from Los Angeles County with a membership of over 1,500 to Tehama with 9 members. Every doctor who is a member of the California Medical Association should urge his wife to join the Auxiliary if she does not belong. These missing wives are missing an opportunity! Among all of the organizations to which she may belong, the Woman's Auxiliary is unique. Our basis for membership is the fact that we are all wives of doctors. So we begin with the mutual interest we all share in helping our husbands and their chosen profession. Where else can you find so strong a reason for working together?

Included in our total of 7,383 members are 37 members-at-large who live in counties where there is no organized County Auxiliary. We are proud of these 37 women. Although they do not have the advantage of enjoying the fellowship and programs of a group meeting, they continue to support the policies and programs of the State Auxiliary by payment of their dues. And we feel sure that they do their part as liaison between the public and the medical profession in the areas in which they live.

Through County Auxiliary programs the physician's wife is provided with accurate information on matters concerning medicine and public health. She will be able to answer the questions of her neighbors and friends. Possession of the correct information is her responsibility, for she is more often quoted as a physician's wife than as an individual. Through the Auxiliary she is able to learn about the health needs of her community and what can be done about them, which makes her participation in other community organizations more effective. Whether or not she chooses the role, she represents the medical profession to the public with whom she associates. She can wield a positive influence if she is well informed and articulate. She can well consider the fact that in helping the public to better understand the aims and problems of her husband's profession she is also helping herself, since it is *her* way of life as well as his.

It is a privilege to belong to a County Auxiliary. It is also a pleasure, for one of membership's richest rewards is the opportunity to be friends with the wives and families of other physicians. Friendships can be strengthened through working together.

During the summer the membership committees in the County Auxiliaries will be making plans for maintaining the active interest of their present members, for creating a desire to rejoin on the part of members who have dropped out and for increasing their membership by inviting all wives who are eligible to become members. Experience has taught us that the personal invitation to "come with me to the next Auxiliary meeting" has the strongest appeal to the prospective member. So we hope that every member will consider herself a part of her Auxiliary's membership committee in this sense and that she will invite someone she knows and thinks should belong. "Let it begin with me."

To the members of the California Medical Association:

> "Let it begin with *YOU*."
> Invite *your* wife to join.

MRS. JOHN L. GALLAGHER,
Membership Chairman
Woman's Auxiliary to the
California Medical Association

INFORMATION

The Inability of the Consumer Price Index to Measure "Cost of Quality" Of Medical Care

A Report of the Bureau of Research and Planning, California Medical Association

The Consumer Price Index (CPI) of the Bureau of Labor Statistics is an index which measures the price changes of 300 goods and services. Among these 300 items are several which reflect price changes for selected health care and medical care services. These comprise the medical care index and physician fee index, depending on what services are being measured.

The Physician Fee Index is based upon charges for five procedures rendered by physicians: Appendectomy, tonsillectomy, obstetrical delivery, home visits and office visits.

Although the CPI takes into account quality changes in the prices for various goods, it is unable to do so for services, particularly physicians' services.

The difficulty in measuring the "cost" of quality of medical care overstates price increases in the physician fee and medical care indexes.

THE PROBLEM of assigning values to the cost of living in the United States is of central importance to our economy. This problem has been attacked in various ways depending upon the use of the data and their analysis. Although the central problem—measurement of the cost of living—is still unresolved, much has been accomplished through the use of the Consumer Price Index of the Bureau of Labor Statistics in measuring the movement of prices relative to personal income in the economy. This device is of considerable importance in analyzing and understanding the price of medical care and, in particular, movements in its price.

At present all data collected for the measurement of price changes within the area of medical care are presented by the Bureau of Labor Statistics in the Medical Care Index component of the Consumer Price Index. It represents just one part of the Consumer Price Index and contains within it the Physician Fee Index.

Generally, over short periods the Index does a more than adequate job in portraying price changes for the components. However, over longer periods the Index is faced with a number of problems which tend to give it an upward bias. The causes for this bias are based upon changes in the quality of the goods or services and the replacement of one good or service by another. This problem has not been ignored by the Bureau of Labor Statistics; an effort has been made to filter out changes that reflect more than changes in price. Two techniques employed are those of "linking" and "factoring."

The first of these techniques, "linking," tries to take into account the effect of a quality change by cancelling out the difference in price between the commodity (good) with and without the quality change. This technique, the most frequently used for quality changes, assumes that the full difference in price between the goods of different quality is reflected only in the price increase. The second method, "factoring," makes an adjustment for quality difference by increasing or reducing the price of the commodity in the current period by the value of the quality difference, and then comparing this adjusted price with the price for the preceding period. This technique takes into consideration both quality and price change in order to maintain a continuity of price change within the index. Although these methods of allowing for "quality changes" are somewhat effective for durable goods, i.e., automobiles, stoves, furniture and other types of household appliances, they cannot be applied to the large number of service items measured by the C.P.I.

One part of the C.P.I. where the measurement of quality is of utmost importance is the structure of the Medical Care Index. The Medical Care Index measures changes in the cost of hospitalization (daily service changes), physicians' fees, health insurance, medication, dentists' fees, eye examinations and glasses. The problem of quality measurement is to be found in almost all of the items in the Medical Care Index. In dealing with quality change measurement, an example is found in evaluating hospitalization costs: *Although the cost of daily hospitalization has increased, the length of hospital stay has decreased. The change in the Medical Care Index, therefore, does not reflect the impact of the lessened hospital stay upon the cost of hospitalization.* Fees for physicians' services, according to the C.P.I., have increased greatly in price. Once again, the increase in price does not accurately reflect a number of other conditions entering into the pricing of these services, such as new techniques in the treatment of disease or injury, or length of treatment. Unfortunately, the Medical Care and the Physician Fee Index fail to price out these quality changes. The result is an upward bias in Medical Care prices.

In the case of a new good, e.g., drugs, the item is priced and given an index value of 100 at the time it is entered into the schema of the index. Thereafter it is priced as are other goods, with changes in price reflected by changes in the index number. However, *whether people are better off because of the use of the drug is not reported by the index, since it is not the function of the index. After a new product has been introduced, only the change in cost to, and not the well-being of, the user is measured.* Considering the various manipulative techniques employed to adjust for quality, it can readily be observed that the C.P.I. does not accurately measure the effect of the introduction of a new good or service. As a matter of fact, the C.P.I. is designed so that the addition, subtraction or change in quality of goods or services will have little or no effect upon the measurement of price changes by the index. Nevertheless, it is apparent that the introduction of new goods and services and changes in quality do influence the well-being of the consumer. In examining the last point, relative to the apparent increase in prices of medical care, one authority has concluded that:*

> In the case of medical care, . . . the apparent 30 per cent increase of the last eight years must be qualified by considering the increase in medical knowledge, better drugs and the new preventive medicines. Certainly the Salk vaccine was a tremendous medical advance which, in addition to sparing many lives, will consume dollars that would have gone for the treatment of polio.
>
> Basically, then, the measurement of price changes comes down to a question of whether one gets more or less for his money. In the field of medical care it can be argued that most people would rather pay today's prices for today's medical care, than yesterday's prices for yesterday's medical care. The fact that diseases were treated more cheaply in yesterday's world is more than offset by the increased knowledge and new drugs available for curing diseases today. Although it is difficult to measure improvement in the quality of medicine in quantitative terms, there is no justification for ignoring it—which is what our present method of computing price indexes does.

Although the C.P.I. is often criticized for these shortcomings, it still is a basic source of significant data which are not available elsewhere. It is a fact, however, that the Consumer Price Index, Medical Care Index or Physician Fee Index do not take into account quality changes and, therefore, result in the apparent inflation of the prices of medical care.

California Medical Association, 693 Sutter Street, San Francisco 2.

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*Richard Ruggles, *Measuring the Cost of Quality,* Challenge, Vol. X, No. 2, November 1961.

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

The new $900,000 William H. and Helen C. Ford Diagnostic and Treatment Center at **Children's Hospital of the East Bay,** Oakland, will be dedicated September 23.

With a total of 29,360 square feet, the Diagnostic and Treatment Center will house the hospital's outpatient department (28 specialty clinics), clinical diagnostic laboratories, x-ray rooms, and facilities for electroencephalograms and electrocardiograms.

LOS ANGELES

Dr. Joseph P. O'Connor of Pasadena has been appointed medical director of the Bureau of Public Assistance of the Department of Charities of Los Angeles County.

The bureau is responsible for administering the **California Medical Care Program** under the general supervision of the State Department of Social Welfare.

Dr. O'Connor's appointment fills the position left vacant by the death of Dr. Morris L. Steckel in December, 1961.

* * *

Dr. Hans von Leden, associate professor of surgery (head and neck) at the U.C.L.A. School of Medicine, was presented with the Casselberry award at the 83rd Annual Meeting of the American Laryngological Association in Dallas.

The award is given in recognition for contributions to the "art and science of laryngology and rhinology." Dr. von Leden received it for his investigation of the mechanism of phonation. The Casselberry award has been presented only 12 times since it was established 50 years ago. Dr. von Leden is the first recipient since 1949.

* * *

The Childrens Hospital of Los Angeles will hold the First Clinical Conference in **Pediatric Anesthesiology** on January 26 and 27, 1963. The two-day program will be devoted to the practical aspects of the preanesthetic, anesthetic, and postanesthetic management of infants and children. Modern equipment and monitors will be demonstrated in a model operating room.

Further information can be obtained by writing to Dr. M. Digby Leigh, Children's Hospital of Los Angeles, 4614 Sunset Boulevard, Los Angeles 27.

* * *

Dr. David B. Hinshaw has been appointed dean of **Loma Linda** University's School of Medicine, succeeding **Dr. Walter E. Macpherson,** who was made vice-president for medical affairs at the University.

Dr. Hinshaw, a graduate of Loma Linda, has been on the faculty of the medical school since 1954, becoming professor of surgery and chairman of the school's department of surgery in 1961.

* * *

An introductory course in **Expanded Surgery of the Nasal Septum** and Closely Related Structures will be presented at the Loma Linda University School of Medicine, Los Angeles, October 29 to November 1.

The program will be under the sponsorship of the department of otolaryngology, of which Dr. Leland R. House is professor and head, and with the cooperation of the American Rhinologic Society. Dr. Maurice H. Cottle, professor of otorhinolaryngology, Chicago Medical School, will be the guest director. In a series of lectures he will present the history, objectives, embryology and various steps of septum surgery.

SAN FRANCISCO

The Sixth Annual **Western Industrial Health Conference** will be held at the Jack Tar Hotel, San Francisco, October 12 and 13. The conference brings together the Western Industrial Medical Association, Western Industrial Nurses Association, American Industrial Hygiene Association, American Society of Safety Engineers, and American Conference of Governmental Industrial Hygienists.

* * *

Dr. D. W. Winnicott of London will be the main speaker and will participate in a one-day workshop on **Providing for the Child in Health and Crisis** which is to be held Sunday, October 7, at the Jack Tar Hotel, San Francisco. The Workshop is a function of the extension division of the San Francisco Psychoanalytic Institute.

Dr. Winnicott and a panel of psychoanalysts, pediatricians, teachers and social workers will discuss care for the child in normal circumstances as well as in situations complicated by individual family and community crises. The fee for registration is $10. Registration forms can be obtained by writing to Miss Jennie Chiado, executive secretary, San Francisco Psychoanalytic Institute, 2380 Sutter Street, San Francisco 15.

GENERAL

The State Board of Public Health will hold **hearings** to consider proposed regulations to prohibit use of the **Hoxsey Method for treatment of internal cancer** on August 22 at 10:00 a.m. in Room 1122, State Office Building, 107 South Broadway, Los Angeles, and on August 29, 1962 at 10:00 a.m. in Room 802, State Department of Public Health Building, 2151 Berkeley Way, Berkeley.

The regulations were developed upon the advice of the Cancer Advisory Council of the California State Department of Public Health.

Persons interested in the proposed regulations are invited to attend the hearings.

The report of the Cancer Advisory Council is available for inspection at the following places:

Bureau of Food and Drug Inspections, Room 7, B Street Pier Building, San Diego.
Bureau of Food and Drug Inspections, Civic Center Building, Room 209, 157 West Fifth Street, San Bernardino.
Bureau of Food and Drug Inspections, Room 708, California State Building, 217 West First Street, Los Angeles.
Bureau of Food and Drug Inspections, 5545 East Shields Avenue, Fresno.
Bureau of Chronic Diseases, Room 412, 2000 Hearst Street, Berkeley.
Bureau of Food and Drug Inspections, 631 J Street, Sacramento.

* * *

The **California Society of Anesthesiologists** has announced the opening of competition for its **annual award to residents** submitting the best papers on a clinical or laboratory subject. The senior author must be a resident physician training in anesthesiology in the State of California. Three prizes, one of $200, one of $75 and one of $50 are offered.

Papers must be submitted before November 30, 1962, to Dr. Verne L. Brechner, division of anesthesiology, University of California Medical Center, Los Angeles 24.

EDUCATION NOTICES

POSTGRADUATE

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Seminars in Internal Medicine. Sunday through Wednesday, August 12 through 15. At University Residential Conference Center, Lake Arrowhead. Fee: $137.50 includes room and meals for 3 days.

Pediatric Neurology. Wednesday through Sunday, August 15 through 19. At University Residential Conference Center, Lake Arrowhead. Fee: $150.00 includes room and meals for 4 days. 21½ hours.

The Evaluation of Therapeutic Agents and Cosmetics. Thursday through Saturday, August 16 through 18. 17 hours. Fee: $100.00.

The Endocrine Aspects of Obstetrics and Gynecology. Thursday through Saturday, August 23 through 25. 21 hours. Fee: $60.00.

Teaching Clinics in Internal Medicine. Thursdays. September 13 through December 6. Fee: $60.00.

A Basic Science Course in Ophthalmology. Wednesdays. October 17, 1962, through April 17, 1963. Fee and hours to be announced.

Clinical Traineeships. Anesthesia and Dermatology and Pediatric Cardiology. Dates to be arranged. 2 weeks: $150.00; 4 weeks: $250.00. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Athletic Medicine. Wednesday through Friday. August 29 through 31.*†

New Concepts in Arthritis. Thursday and Friday. September 6 and 7.*†

Internal Medicine—A Selective Review. Monday through Friday. September 10 through 14.*†

Postgraduate Seminars in Clinical Sciences. Saturday mornings. September 15 through November 17. Mercy Hospital, Sacramento. No fee. 17½ hours.

Psychotherapy in Medical Practice. Wednesdays. September 19 through December 5. Langley Porter Neuropsychiatric Institute. Fee: $25.00. 48 hours.

Clinics in the Surgical Specialties. Thursday through Saturday. September 20 through 22.*†

Radiological Physics. Tuesday evenings. September 25 through April 14, 1963. Fee: $150.00. 48 hours.

Neuropsychiatry in General Practice. Thursday evenings. September 27 through November 1. Fee: $5.00. 12 hours.

Man to Man. Thursday evenings. September 27 through November 15. 8 hours.*

Psychiatric Lecture Series. Saturday mornings. September 29 through November 3. Herrick Memorial Hospital, Berkeley. Fee: $5.00. 12 hours.

Surgery. Saturday, September 29. Franklin Hospital, San Francisco.*†

Glaucoma. Monday through Wednesday. October 1 through 3.*†

Pediatric Infections. Friday through Sunday. October 5 through 7.*†

Medicine in Industry. Wednesday and Thursday. October 10 and 11.*†

Drug Therapy in Clinical Practice. Friday and Saturday, October 12 and 13.*†

Obstetrics and Gynecologic Surgery. Thursday through Saturday. October 25 through 27.*†

Multiple Injuries and Trauma. Thursday and Friday. November 1 and 2.*†

Problems in EKG Interpretation. Saturday and Sunday. November 3 and 4. Mount Zion Hospital, San Francisco.*†

Clinics in Dermatology. Saturday and Sunday, November 10 and 11.*†

Psychiatry in General Practice—A Clinical Workshop. Saturday and Sunday. November 17 and 18. Napa State Hospital. Fee: $10.00.†

The Neck and Shoulder-Girdle. Friday and Saturday. November 30 and December 1.*†

Practical Electrocardiography. Friday and Saturday. November 30 and December 1. Franklin Hospital, San Francisco.*†

Psychiatric Perspectives in Medicine. Saturday and Sunday. December 1 and 2. Stockton State Hospital.*†

Ocular Pharmacology and Therapeutics. Thursday through Saturday. December 6 through 8.*†

Puberty and the Climactic. Friday and Saturday. December 7 and 8.*†

The Impact with the Disturbed Patient. Thursday through Saturday. December 13 through 15. Langley Porter Neuropsychiatric Institute.*†

Courses presented by Special Arrangement (continuously):

1. **Principles and Clinical uses of Radioisotopes** (full time for one to three months).

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

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*Fees to be announced.
†Hours to be announced.

Intensive Review of Internal Medicine. Tuesday through Saturday and Monday through Friday. September 4 through 14. 8:30 a.m. to 12:30 p.m. Los Angeles County Hospital. Fee: $65.00.

Process-Oriented Psychotherapy. Tuesday evenings. 8:00 to 10:00 p.m. September 11 through October 30. Veterans Center. Fee: $50.00.

Psychiatric Case Conferences for Family Physicians. Beginning September 20. An integration of psychiatry into medicine. 16 weekly case conferences. Psychiatric Unit, Los Angeles County Hospital. Fee: $40.00.

Psychiatry in Medical Practice. September 22 and 23. Two-day intensive workshop. San Diego County General Hospital. Fee: $25.00.

Bedside Clinics and Set Clinics in Internal Medicine. Thursday evenings. 7:30 to 9:30 p.m. October 4, 1962 through January 10, 1963. Los Angeles County Hospital. Fee: $65.00.

Symposium on Neoplastic Diseases (Homecoming). Thursday and Friday. November 1 and 2. Ambassador Hotel. Fee. $25.00.

Psychiatry in Medical Practice. Saturday and Sunday. November 17 and 18. Santa Barbara County General Hospital. Fee: $25.00.

Electrocardiographic Interpretation. Thursday through Saturday. December 6 through 8. Statler-Hilton Hotel, Los Angeles.

1963

Psychiatry in Medical Practice. January 12 and 13. Two-day intensive workshop. San Bernardino County General Hospital. Fee: $35.00.

Pediatric Psychiatry for General Practitioners and Pediatricians. January 30 through April 10. Psychiatric Unit, Los Angeles County General Hospital. Fee: $35.00.

Psychiatry Case Conferences for Medical Practitioners. January 30 through April 10. Eleven sessions, to be held simultaneously at St. John's Hospital, Santa Monica; Orange County General Hospital, Orange; Memorial Hospital of Long Beach; Cedars of Lebanon Hospital. Fee: $40.00.

Psychiatry Courses. *Contact:* Allen J. Enelow, M.D., associate clinical professor, Department of Psychiatry, 1934 Hospital Place, Los Angeles 33, CA 5-3131, Ext. 71951.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

LOMA LINDA UNIVERSITY

Introductory Course in Surgery of the Nasal Septum and Closely Related Structures. Monday through Thursday. October 29 through November 1. Enrollment limited to 30. Fee: $150.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed, other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Pulmonary Diseases** (can be arranged).

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For information contact W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

PRESBYTERIAN MEDICAL CENTER

Gastroenterostomy. Saturday, November 10. 7 hours. Fee: $25.00.*

Pediatrics. Saturday, December 1. 7 hours. Fee: $25.00.*

Diabetes and Thyroid. Saturday, January 12, 1963. 7 hours. Fee: $25.00.*

Arteriosclerosis. Saturday, January 19, 1963. 7 hours. Fee: $25.00.*

Dermatology. Saturday, February 2, 1963. 7 hours. Fee: $25.00.*

Operable Heart Disease. Friday and Saturday. March 1 and 2, 1963. 14 hours. Fee: $25.00.

Office Diagnosis. Saturday, March 9, 1963. 7 hours. Fee: $25.00.*

Cancer. Saturday and Sunday. March 16 and 17, 1963. 14 hours. Fee: $25.00.

Fractures: "4-R's." Saturday, March 23, 1963. 7 hours. Fee: $25.00.*

Minor Surgery: Office and Hospital. Saturday, April 6, 1963. 7 hours. Fee: $25.00.*

Contact: Arthur Selzer, M.D., Chairman, Education Committee, Presbyterian Medical Center, Clay & Webster Streets. San Francisco 15. WEst 1-8000.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

Sacramento Valley Counties Postgraduate Circuit Courses in Dunsmuir, Redding, Chico and Auburn in cooperation with Stanford University School of Medicine. 8 monthly meetings beginning week of September 10.

North Coast Counties Postgraduate Circuit Courses in Eureka and Ukiah, in cooperation with the University of California School of Medicine, San Francisco. 8 monthly meetings beginning week of September 10.

For information regarding Postgraduate Circuit Courses and Postgraduate Institutes, contact: Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2. PRospect 6-9400, Ext. 68.

* * *

AUDIO-DIGEST FOUNDATION

Audio-Digest Foundation, the California Medical Association's nonprofit subsidiary organized for the practicing physician's continuing postgraduate medical education, has just released its 1962 Catalog of Classics.

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*These courses will be offered at $25.00 per course or 4 courses for $80.00 or 8 courses for $120.00. Operable Heart Disease and Cancer courses not included.

Representing tape-recorded highlights of the past year's most significant medical meetings (American Medical Association, American College of Physicians, American Society of Anesthesiologists, American College of Obstetricians and Gynecologists, and dozens of university postgraduate courses) the new Catalog lists 355 one-hour tape-recordings representing all areas of medical practice. Copies of the catalog and information concerning continuing subscriptions to Audio-Digest programs (General Practice, Obstetrics-Gynecology, Anesthesiology, Pediatrics, Internal Medicine and Surgery and a prospective new service in Ophthalmology-Otorhinolaryngology) may be obtained by writing to Claron L. Oakley, Editor, 618 South Westlake Avenue, Los Angeles 57.

Medical Dates Bulletin

RENO SURGICAL SOCIETY, Reno, Nevada. August 23 through 25. *Contact:* Donald F. Guisto, M.D., program chairman, 506 Humboldt Street, Reno.

NATIONAL KIDNEY DISEASE FOUNDATION, Southern California Chapter, Second Annual Symposium. September 13. Ambassador Hotel. Los Angeles. 9:00 a.m. to 5:00 p.m. *Contact:* Mrs. Jean Gordon, administrative assistant.

ST. JOHN'S HOSPITAL POSTGRADUATE ASSEMBLY. September 13 through 15. *Contact:* John C. Eagan, M.D., director, St. John's Hospital, 1328 22nd Street, Santa Monica.

VENTURA COUNTY HEART ASSOCIATION AND SANTA BARBARA COUNTY HEART ASSOCIATION 7th Annual Symposium on Cardiovascular Disease. Santa Barbara Biltmore Hotel. September 22, 9:00 a.m. to 5:00 p.m. *Contact:* Robert E. Wolf, executive director, Ventura County Heart Association, 848 Santa Clara, Ventura, or Mrs. Sara Clyde, executive director, Santa Barbara County Heart Association, 18 La Arcada Ct., Santa Barbara.

LOS ANGELES COUNTY HEART ASSOCIATION 32nd Annual Professional Symposium on Heart Disease. Statler Hilton Hotel, Los Angeles. September 26 and 27. *Contact:* Chauncey A. Alexander, executive director, L. A. County Heart Association, 2405 W. 8th Street, Los Angeles 57.

SAN FRANCISCO HEART ASSOCIATION 32nd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco, September 26 through 28, 9:00 a.m. to 5:00 p.m. *Contact:* Gene C. Taylor, executive director, San Francisco Heart Association, 259 Geary Street, San Francisco 2.

SAN DIEGO COUNTY HEART ASSOCIATION 12th Annual Professional Symposium on Heart Disease. Town and Country Hotel, San Diego. September 28 and 29. *Contact:* Mr. O. M. Avison, executive director, 3545 4th Avenue, San Diego 3.

AMERICAN SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGERY, Hawaiian Village Hotel, Honolulu. *Contact:* T. Ray Broadbent, M.D., secretary, 508 E. South Temple, Salt Lake City. October (dates to be announced).

THE PACIFIC COAST FERTILITY SOCIETY 11th Annual Convention at the Mountain Shadows Hotel, Scottsdale (Phoenix), Arizona, October 4 through 7. *Contact:* Gregory Smith, M.D., secretary, 909 Hyde Street, San Francisco 9.

CALIFORNIA CONGRESS ON MEDICAL QUACKERY. Del Webb Towne House, San Francisco. October 10. *Contact:* Eugene G. Miller, M.D., 693 Sutter Street, San Francisco.

ANNUAL MEETING, CALIFORNIA DIVISION OF THE AMERICAN CANCER SOCIETY, October 11 and 12. Del Webb Towne House, San Francisco. *Contact:* Mr. Robert Murphy, 875 O'Farrell Street, San Francisco.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION. Jack Tar Hotel, San Francisco. October 12 and 13. *Contact:* B. M. Brundage, M.D., secretary, Atomics International, P. O. Box 309, Canoga Park, Calif.

WESTERN INSTITUTE ON EPILEPSY 14TH ANNUAL MEETING. October 19 through 20. Sir Francis Drake Hotel, San Francisco. *Contact:* Bill Garoutte, M.D., chairman, U.C. Medical Center, 3rd and Parnassus Avenues, San Francisco 22.

KAISER FOUNDATION HOSPITAL'S Sixth Annual Symposium. "The Flow of Life." October 19 and 20. Fairmont Hotel, San Francisco. *Contact:* Amos Lieberman, M.D., director of Medical Education, Kaiser Foundation Hospital, 2425 Geary Street, San Francisco.

AMERICAN FRACTURE ASSOCIATION. October 20 through 25. Huntington-Sheraton Hotel, Pasadena. *Contact:* H. W. Wellmerling, M.D., secretary-general, 610 Griesheim Bldg., Bloomington, Illinois.

AMERICAN EPILEPSY FEDERATION ANNUAL MEETING. October 21. Sir Francis Drake Hotel, San Francisco. *Contact:* Mrs. Fred S. Markham, program chairman, c/o California Epilepsy Society, 4343 Crenshaw Blvd., Los Angeles 8.

CALIFORNIA ACADEMY OF GENERAL PRACTICE Annual Meeting. Masonic Memorial Temple, San Francisco. October 21 through 24. *Contact:* Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.

KERN COUNTY GENERAL HOSPITAL Second Annual Postgraduate Conference and Alumni Day. October 26. *Contact:* George A. Paulsen, M.D., chairman, Conference Committee, Kern County General Hospital, 1830 Flower Street, Bakersfield.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting. October 26 through 28. Mark Thomas Inn, Monterey. *Contact:* Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

WESTERN ORTHOPAEDIC ASSOCIATION. October 28 through November 1. Fairmont Hotel, San Francisco. *Contact:* Mrs. Vi Mathiesen, executive secretary, 351 21st Street, Oakland 12.

NEVADA STATE MEDICAL ASSOCIATION 59th Annual Meeting. October 31 through November 3. Stardust Hotel, Las Vegas. *Contact:* Nelson B. Neff, executive secretary, Nevada State Medical Association, 506 Humboldt Street, Reno, Nevada.

AMERICAN RHINOLOGIC SOCIETY 8TH ANNUAL MEETING. Statler Hilton Hotel, Los Angeles. November 1 and 2. *Contact:* American Rhinologic Society, 530 Hawthorne Place, Chicago 13.

TB & HEALTH ASSOCIATION OF LOS ANGELES COUNTY Symposium on the Techniques of Teaching Diseases of the Chest. November 3. Sheraton West Hotel, Regency and Wedgewood Rooms, Los Angeles. 8:30 a.m. to 3:30 p.m. *Contact:* Oscar J. Balchum, M.D., chairman, Planning Committee, c/o TB & Health Assoc. of Los Angeles County, 1670 Beverly Blvd., Los Angeles 26.

American Academy of Ophthalmology and Otolaryngology, Las Vegas Convention Center, Las Vegas. November 4 through 9. *Contact:* W. L. Benedict, M.D., executive secretary-treasurer, 15 Second Street, S.W., Rochester, Minn.

Los Angeles Pediatric Society 19th Annual Brennemann Lectures, Ambassador Hotel, Los Angeles. Speakers: Albert B. Sabin, M.D., and Malcolm A. Holliday, M.D. November 7 and 8. *Contact:* Leslie M. Holve, M.D., vice-president, 1015 Gayley Avenue, Los Angeles 24.

San Diego County General Hospital 16th Annual Postgraduate Assembly, in conjunction with University of Oregon Medical School. November 9 and 10. Town and Country Hotel, San Diego. *Contact:* David E. Wile, M.D., chairman, 2850 6th Avenue, San Diego 3.

California Conference of Local Health Officers Biannual Meeting. Riverside County Health-Finance Building. November 13-14. *Contact:* Wm. Allen Longshore, Jr., M.D., asst. chief, Division Community Health Services, State Dept. of Public Health, Berkeley.

American College of Physicians, Southern California Region Annual Basic Science Lectureship Dinner. Statler Hotel, Los Angeles, November 14, 6:30 p.m. *Contact:* George C. Griffith, M.D., A.C.P. Governor for Southern California, P. O. Box 25, 1200 North State Street, Los Angeles 33.

American College of Chest Physicians (Interim Session). November 24 and 25. Ambassador Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 E. Chestnut Street, Chicago 11.

American Medical Association Clinical Meeting, Los Angeles. November 25 through 28. *Contact:* F. J. L. Blasingame, M.D., executive vice-president, 535 N. Dearborn, Chicago 10.

American Medical Women's Association, Ambassador Hotel, Los Angeles. November 29 through December 2. *Contact:* Jessie Laird Brodie, M.D., executive director, 1790 Broadway, New York 19.

West Coast Allergy Society, Annual Meeting. December 1. Portland, Oregon. *Contact:* Mr. J. M. Chesebro, executive secretary, 1818 S.E. Division Street, Portland.

1963 MEETINGS

San Diego County Heart Association First Annual Postgraduate Seminar on Heart Disease. February 4 through 8. Featured Teacher: Pane Wood, M.D., London, England. *Contact:* Mr. O. M. Avison, executive director, San Diego County Heart Assoc., 3545 - 4th Avenue, San Diego 3.

Institute Metabolic Research 11th Annual Session. "Dynamics of Endocrine and Metabolic Diseases." February 11 through 13. Highland-Alameda County Hospital, Main Auditorium, Oakland. *Contact:* L. W. Kinsell, M.D., director, Institute of Metabolic Research.

American College of Physicians Southern California Regional Meeting, Hotel Del Coronado, Coronado. February 15 through 17. Submit abstract of 300 words or less on or before November 1, 1962, to Walter P. Martin, M.D., 211 Cherry Avenue, Long Beach 2. *Contact:* George C. Griffith, M.D., Governor for Southern California, A.C.P., P.O. Box 25, 1200 North State Street, Los Angeles 33.

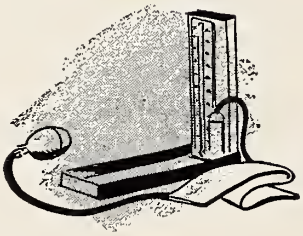
American College of Cardiology 12th Annual Meeting. February 28 through March 3. Ambassador Hotel, Los Angeles. *Contact:* Philip Reichert, M.D., executive director, Empire State Building, 350 - 5th Ave., New York 1.

Loma Linda University School of Medicine Alumni Postgraduate Convention. March 3 through 7. Refresher Courses: March 3 and 4, 8:00 a.m. to 12:00 noon; 2:00 p.m. to 5:00 p.m. White Memorial Medical Center. Scientific Assembly: March 5 through 7, Ambassador Hotel. *Contact:* Jack Hallatt, M.D., general chairman, 316 N. Bailey St., Los Angeles 33.

California Medical Association Annual Session. March 24 through 27. Ambassador Hotel, Los Angeles. *Contact:* John Hunton, executive secretary, California Medical Association, 693 Sutter Street, San Francisco 2.

TB & Health Association of California Annual Meeting. April 4 through 6. Villa Hotel, San Mateo. *Contact:* William W. Phreaner, coordinator, Public Relations, 130 Hayes Street, San Francisco 2.

American Gastroenterological Association. May 30 through June 1. Fairmont Hotel, San Francisco. *Contact:* Wade Volwiler, M.D., Department of Medicine, University of Washington, Seattle.



Psychic Factors Found In Bleeding Disorder

Emotional problems appear to be related to chronic purpura, a bleeding disorder, in much the same way that psychological factors have been linked to bleeding stigmata, according to Drs. David P. Agle and Oscar D. Ratnoff, Cleveland.

A study of nine women with purpura, a condition in which blood spreads abnormally into the skin and creates purple areas, revealed that all had previously experienced hysterical symptoms, the two physicians wrote in the June *Archives of Internal Medicine,* published by the American Medical Association.

The emotional background of these patients "displays similarities to that previously described in some individuals with bleeding stigmata," they said.

Perhaps the most extensively studied stigmatized individual of this century has been Theresa Neumann of Konnersreuth, the authors pointed out. Prior to the first appearance of the stigmata, reproducing the wounds of Christ, Miss Neumann had alternating episodes of blindness, deafness, convulsions, bleeding, and paralysis, they said.

Similar episodes have been described in Mohammedans in whom bleeding simulating the battle wounds of their prophet have appeared during times of deep contemplation, they said. A number of case reports describe bleeding episodes unrelated to religious experience in patients with various emotional problems, they said.

Their own study suggests that "purpuric bouts" occur at times of emotional stress, the two researchers said. Among stresses reported in the nine patients were fear, resentment, anxiousness, despair, and anger directed outwardly and inwardly, they said.

Eight of the group admitted that they had severe problems in their relationship to members of their family, they said. Bleeding symptoms disappeared in two patients after their husbands died, they said.

In addition to hysterical reactions, such as hallucinations, loss of speech and paralysis, they said, the patients also demonstrated masochistic traits, i.e., an actual enjoyment of hardship.

The authors said they planned further investigations of influence of emotional factors on bleeding episodes in known organic diseases, such as hemophilia.

Dr. Agle is affiliated with University Hospitals of Cleveland. Dr. Ratnoff is professor of medicine, Western Reserve University School of Medicine.

A Gordh Needle for Infants—P. J. Horsey. Lancet—Vol. 1:622 (March 24) 1962.

An indwelling intravenous needle has been designed to fit conveniently on the back of the hand of children and infants. It is particularly useful in children undergoing cardiac catheterization. Its over-all length is 3 cm.

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LESS POTASSIUM LOSS

In addition to inhibition of sodium and chloride resorption, chlorothiazide and hydrochlorothiazide inhibit carbonic anhydrase. Carbonic anhydrase inhibition is implicated in increased potassium loss.

Naturetin, on the other hand, is a single-action diuretic, acting solely on tubular reabsorption; it has virtually no carbonic anhydrase activity. This single action may explain the fact that Naturetin produces less potassium loss than other benzothiadiazines and is therefore of particular value in patients prone to hypokalemia or those on digitalis.

AVAILABLE: Naturetin 5 mg. and 2.5 mg. tablets. **ALSO AVAILABLE:** Naturetin c̄ K (Squibb Bendroflumethiazide 5 mg. and 2.5 mg. capsule-shaped tablets, each with 500 mg. Potassium Chloride), for use when disease or concomitant therapy increases the risk of hypokalemia. For full information, see your Squibb Product Reference or Product Brief.

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Graduate Courses Offered For Teachers in Nursing Field

Three universities in California offer graduate programs which prepare teachers for all types of educational programs in nursing and administrators, supervisors and clinical nursing experts for nursing service agencies. To meet future needs for leadership personnel in nursing it is estimated that, by 1975, approximately 700 nurses should complete masters and higher degree programs in nursing and related fields. In 1960 less than 100 nurses completed such programs.

It is estimated that, at present, 95 per cent of teachers in basic nursing programs, 57.5 per cent of public health nurses and 12 per cent of hospital nurses hold one or more college degrees. Of the teachers in baccalaureate and higher degree programs 77 per cent hold masters degrees and 4 per cent hold doctors degrees; of those in associate degree programs 41 per cent hold masters degrees and of those in diploma programs 21 per cent hold masters degrees.

Of registered nurses in California 55.5 per cent are employed in hospitals, 13.1 per cent in office nursing, 11.3 per cent in private duty, 9.1 per cent in public health and school nursing, 3.4 per cent in industrial nursing, 2.1 per cent in schools of nursing, and the remainder in various type of positions.

Of licensed vocational nurses 68 per cent are employed in hospitals, 21.5 per cent in private duty and home nursing, 18 per cent in clinics and outpatient departments, 15.5 per cent in nursing homes or sanitariums, 10 per cent in physicians offices, 3 per cent in nursery schools and 3 per cent in visiting nursing in homes.

From a survey of over 6,000 nurses employed in hospitals in 14 counties in California in 1960 it was found that 52 per cent were married, 28 per cent were single and 20 per cent were widowed or divorced. Of these nurses 34 per cent were under 30, 47 per cent were between 30 and 49, and 19 per cent were 50 years or over.

Physical Activities Studied In Rheumatic Heart Patients

Restriction of physical activities in certain patients following rheumatic fever may serve "no useful purpose," a study reported in the June 23 *Journal of the American Medical Association* suggested.

The observation applies only to patients who have recovered from an acute attack of rheumatic fever without serious heart damage, according to Drs. Alvan R. Feinstein, Harry Taube, Ralph Cavalieri, Stanley C. Schultz, and Lawrence Kryle, New York City. Restrictions on activities in such patients are aimed at preventing heart damage, they said.

A total of 216 patients who had recovered from

(Continued on Page 51)

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Moreover, the diuretic effect of Naturetin is controlled, sustained and gradual, a sharp contrast to the distressingly abrupt initial diuresis characteristic of shorter acting diuretics. Naturetin maintains a favorable urinary sodium-potassium excretion ratio.[2]

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1. Ford, R. V.: Clin. Res. Notes 2:1 (Dec.) 1959. 2. Ford, R. V.: Cur. Therap. Res. 2:92 (Mar.) 1960. 3. Elliott, J. P., Jr., and Goldman, A. M.: South. M.J. 54:794 (July) 1961.

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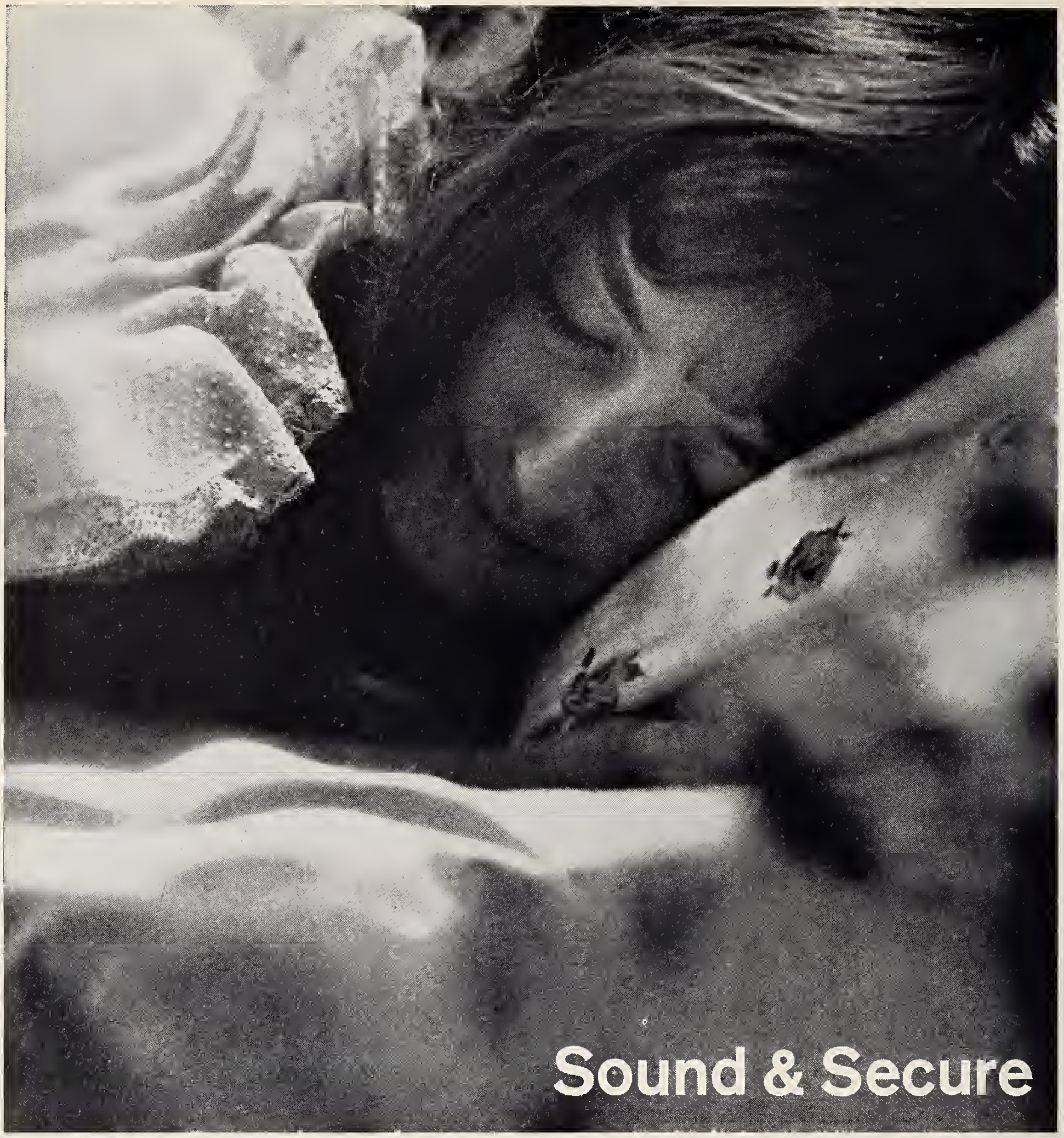

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REFERENCES: **1.** Blumberg, N., Everts, E.A., and Goracci, A.F.: Pennsylvania M.J. *59*:808 (July) 1956. **2.** Matlin, E.: M. Times *84*:68 (Jan.) 1956. **3.** Hodge, J., Sokoloff, M., and Franco, F.: Am. Pract. & Digest Treat. *10*:473 (March) 1959. **4.** Burros, H. M., and Borromeo, V. H. J.: J. Urol. *76*:456 (Oct.) 1956. **5.** Lane, R. A.: New York J. Med. *55*:2343 (Aug. 15) 1955. **6.** Weston, D.T.: Journal-Lancet *76*:7 (Jan.) 1956. 2/3005MB

For complete information about Doriden (including dosage, cautions, and side effects), see the current Physicians' Desk Reference or write CIBA, Summit, N. J.

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Physical Activities Studied In Rheumatic Heart Patients

(Continued from Page 49)

rheumatic fever were studied in an effort to determine whether physical and scholastic restrictions were related to the progression or development of heart disease, they said.

All of the patients were "asymptomatic," that is, they may have had abnormal heart murmurs, x-rays, or electrocardiograms, but strenuous exercise produced no noticeable discomfort, they said. The patients were examined annually at the Irvington House After-Care Clinic for an average of 21 years after their attack of rheumatic fever, they said.

The results indicated that improvement or deterioration in the patients' heart condition had no direct relationship to the presence or absence of restrictions on activities, the researchers said.

Among 141 patients whose school activities had been restricted, the heart condition of 86 per cent remained unchanged or improved while in 14 per cent it become worse, they said. Of 75 patients with no school restrictions, the heart condition remained the same or improved in 92 per cent while it became worse in 8 per cent, they said.

The heart condition became worse in 15 per cent of 66 patients whose after school hours activities were restricted and in 11 per cent of 150 who observed no such restrictions, they said.

After completion of schooling, worsened heart conditions were found in 14 per cent of 42 patients who observed restrictions and in 11 per cent of 174 patients who did not, they said.

Psychosocial aspects of restriction of activities also were studied, the researchers said. The findings indicated that in some cases restrictions had adverse effects on scholastic, occupational and marriage plans, they said.

"These results suggest that no useful purpose is served by many of the scholastic, athletic, vocational, and other physical restrictions that are often imposed upon the asymptomatic post-rheumatic fever patient," the authors concluded.

"These restrictions do not seem to prevent or to augment cardiac deterioration and they may create unpleasant psychosocial effects that negate any of the anticipated medical advantages."

Amodiaquine Hydrochloride in Treatment of Chronic Discoid Lupus Erythematosus—A. Maguire. Lancet—Vol. 1:665 (March 31) 1962.

Seventeen patients were treated for chronic discoid lupus erythematosus with amodiaquine hydrochloride. All patients were of marked chronicity and in the past had received at least one other antimalarial drug. Sixteen had a good response to the drug, and in some the response was dramatic and excellent. Few serious side effects were observed. The dosage appeared to be not more than 200 mg. daily, and usually 200 mg. 3 times a week sufficed.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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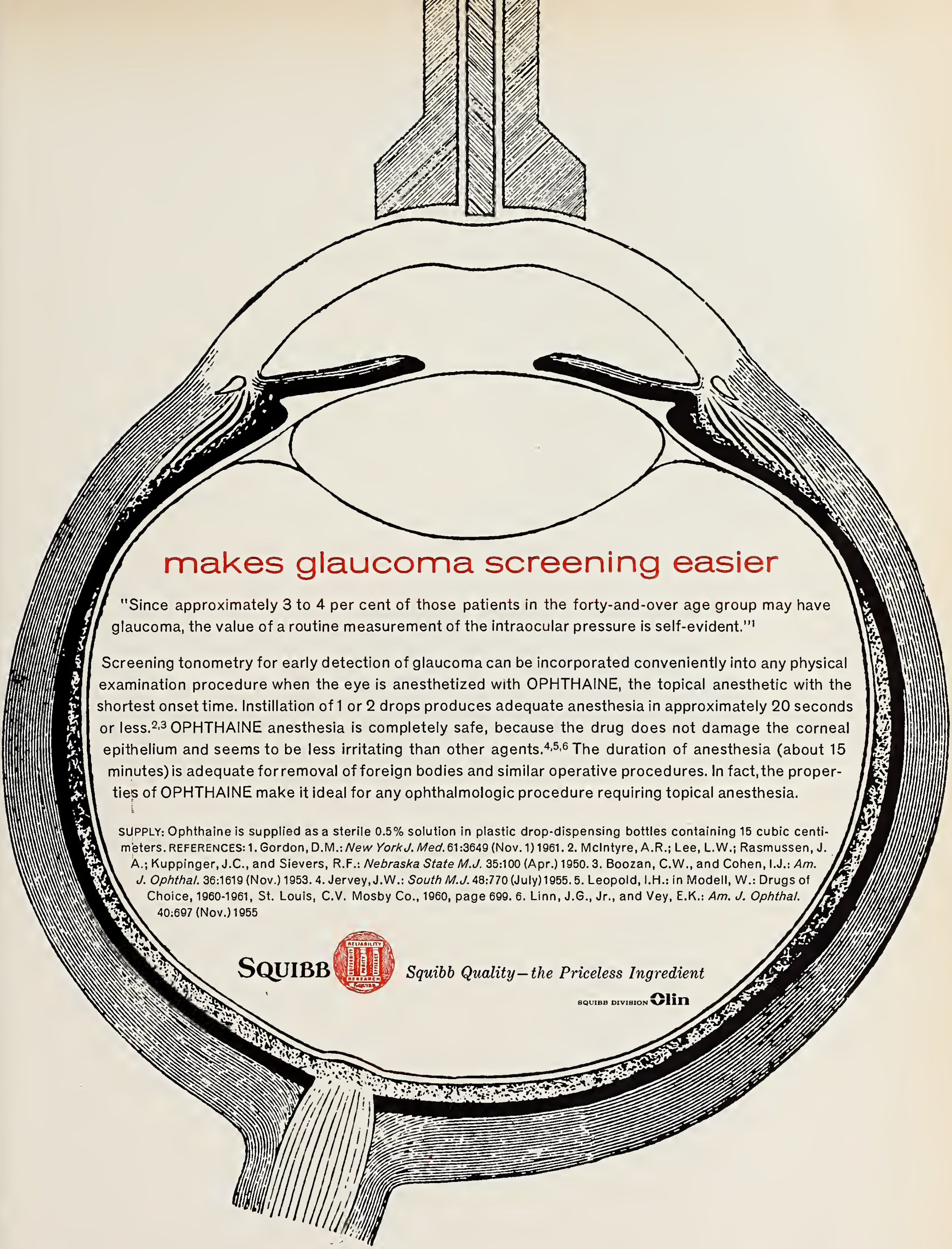## makes glaucoma screening easier

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SUPPLY: Ophthaine is supplied as a sterile 0.5% solution in plastic drop-dispensing bottles containing 15 cubic centimeters. REFERENCES: 1. Gordon, D.M.: *New York J. Med.* 61:3649 (Nov. 1) 1961. 2. McIntyre, A.R.; Lee, L.W.; Rasmussen, J. A.; Kuppinger, J.C., and Sievers, R.F.: *Nebraska State M.J.* 35:100 (Apr.) 1950. 3. Boozan, C.W., and Cohen, I.J.: *Am. J. Ophthal.* 36:1619 (Nov.) 1953. 4. Jervey, J.W.: *South M.J.* 48:770 (July) 1955. 5. Leopold, I.H.: in Modell, W.: Drugs of Choice, 1960-1961, St. Louis, C.V. Mosby Co., 1960, page 699. 6. Linn, J.G., Jr., and Vey, E.K.: *Am. J. Ophthal.* 40:697 (Nov.) 1955

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Type of Hand Not Related To Talent, Strength

The size of a person's hand is not significantly related to its strength or ability, according to an article in the July *Today's Health*, published by the American Medical Association.

"Among musicians, physicians, artists, athletes, and all others who depend on their hands to earn a living there is an infinite variety of stubby fingers, slender fingers, large hands, and small hands," the article said.

Directed by a disciplined, determined brain, human fingers can be trained to perform amazing feats, it said. A master pianist can strike 120 notes per second, it said, and a skilled surgeon can tie strands of silk thread into tight knots inside the human heart with two fingers.

The hands are the busiest, most complex instruments of the entire body, and the thumb is the busiest and most important of its digits, according to the article entitled "What Science Knows About Your Hands."

"Because of the thumb's unique ability to cross over and link up with any one of the other fingers for a pinch, grab, or squeeze, we can get along with one thumb and one other finger," it said. "In a serious hand injury, surgeons try first to save the thumb."

The other fingers are markedly different in strength, the article pointed out.

"In the average person, the middle finger is the strongest, followed in order by the index finger, the fourth finger and the little finger," it said. "Fingers two and three are the fastest of the five. The little finger is the slowest, but finger four is considered by teachers of music and typewriting to be the least responsive to training because of an innate muscular weakness."

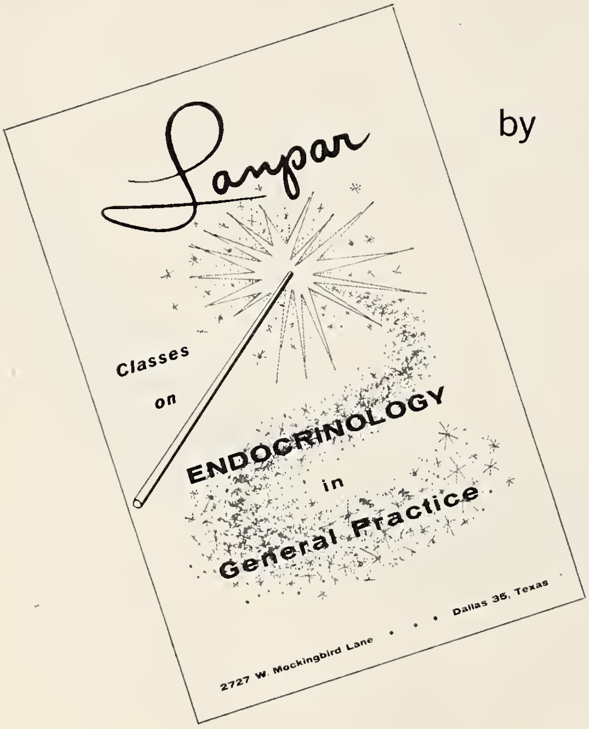
Because of its intricate arrangement of nerves and muscles, the hand is highly vulnerable to any injury, the article said. Even a sprained finger should be properly splinted for two to three weeks or painful swelling may continue for months, it said.

Falling with a glass bottle can cause such terrible cuts that small children should never be permitted to play with or be sent on errands with glass containers, it said.

"Our hands deserve careful treatment," the article said. "As tools of learning, working, and communicating, they can be considered the fundamental vehicle of human thought—partner with the brain in forever separating man from the rest of the animal kingdom."

The article was written by Evan McLeod Wylie.

ENDOCRINOLOGY IN GENERAL PRACTICE



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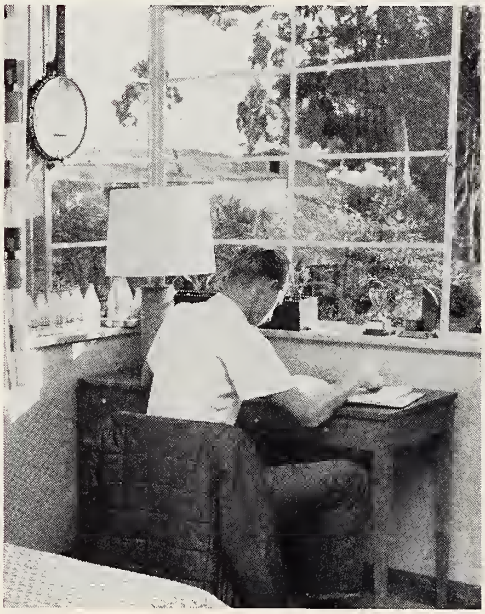

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Yogis are able to accomplish "amazing tricks with their pulse rate and blood pressure," according to Dr. Albert Salisbury Hyman, New York City.

Yogis are followers of yoga, a Hindu philosophy of mental discipline.

In a letter to the June 16 *Journal of the American Medical Association*, Dr. Hyman said a study he made 35 years ago showed that no pulse could be detected at the wrist of a trained Yogi who "willed the pulse to stop."

Since Yogi methods teach selective muscle contraction and relaxation, it is mechanically possible for them to stop or diminish the pulse, he said. A Yogi can constrict the main artery leading to the arm by contracting certain upper chest muscles, he said.

Age Is No Bar to Cataract Surgery

Old age is no barrier to the surgical correction of cataracts, according to an editorial in the June 23 *Journal of the American Medical Association.*

A cataract is an opacity of the lens of the eye which results in loss of sight when the lens becomes entirely opaque. A cataract generally results from the gradual degeneration of the lens tissues and occurs most commonly in older persons. The condition can be corrected by the sugical re-

(Continued on Page 58)

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New Approach Reported to Acne Therapy

A drug chemically related to the female sex hormone estrogen has been found to suppress oiliness in the skin and alleviate acne, according to Dr. Walter C. Herold, Colorado Springs, Colo.

In a preliminary report on a study involving 27 acne patients, Dr. Herold said the drug, 16-epiestriol-3-allyl ether, was found capable of decreasing sebaceous gland activity.

His report was published in the May *Archives of Dermatology*, published by the American Medical Association.

As anticipated, Dr. Herald said, a definite correlation between the amount of oil and the degree of acne was found. As the oil decreased he said, the acne decreased.

Treatment of acne has been directed mainly toward removing or covering up excessive amounts of oil, he said, but it is much more satisfactory to decrease or eliminate the formation of excessive oil in the first place.

Of 17 men and 10 women studied, he said, most were under treatment for several months.

Only three patients failed to show any improvement, he said. Ten showed marked improvement and 10 moderate improvement, he said.

Observed complications were minimal, he said. "This drug could prove extremely valuable in an appreciable number of well-chosen patients and therefore warrants thorough investigation," Dr. Herold concluded.

Age Is No Bar to Cataract Surgery

(Continued from Page 56)

moval of the clouded lens after which cataract glasses are prescribed to replace the natural lens.

"Old age is never a contraindication to cataract surgery," Dr. Charles V. Barrett, Evanston, Ill., said in a signed JAMA editorial. "Certainly, there are few contraindications to cataract surgery. The patient actually requires only a modicum of health and a need for improved vision."

Barring complications, he said, cataract surgery is a "relatively benign procedure from start to finish."

In the premodern era, Dr. Barrett said, multiple operations for the condition were not unusual. However, he said, the present-day procedure is becoming increasingly easier and safer.

The patient usually is up the day after the operation and goes home within a week, he said.

"The restoration of vision in the aged does much toward the maintenance and improvement of the other faculties of mind and body," Dr. Barrett said. "Many an allegedly psychotic older patient has returned to reality through the medium of cataract surgery."

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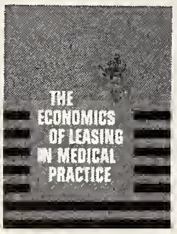

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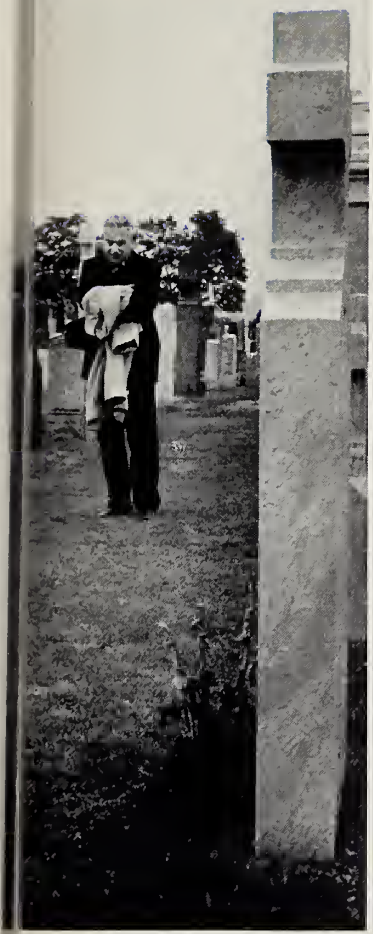

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REFERENCES AND REVIEWS

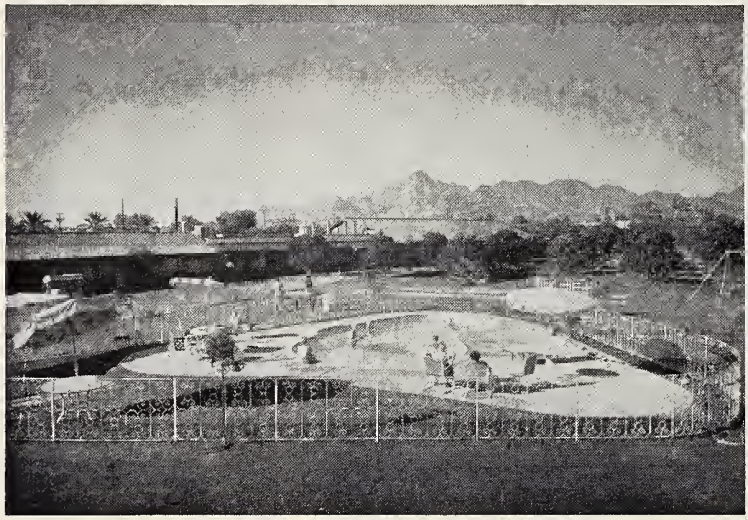
PARTIAL GASTRECTOMY WITH JEJUNAL TRANSPOSITION: FOLLOW-UP INVESTIGATION OF 80 PATIENTS TREATED OPERATIVELY—U. Krause. Acta. Chir. Scand.—Vol. 123:132 (Feb.) 1962.

A series of 80 patients, 57 men and 23 women, with gastric or duodenal ulcer were treated surgically by partial gastrectomy with jejunal transposition, and were followed up after intervals ranging from 8 months to 3½ years. Ulcer recurrences were recorded in 16% of the entire series (22% of the duodenal ulcer patients and 14% of the gastric ulcer patients). The brevity of the interval since operation precludes any conclusions as to the incidence of postcibal symptoms and anemia, although postcibal symptoms did occur in 5 cases between 1 and 3 years after the operation. Jejunal transposition is rated as an excellent method for use in certain cases of carcinoma of the stomach and generally in cases in which total or subtotal gastrectomy is performed in achylic patients. If it is to be used in normochylic or hyperchylic patients, however, the procedure should be combined with vagotomy. This applies equally in cases of gastric ulcer.

* * *

ANTIBIOTICS AND GAMMA GLOBULIN IN PSEUDOMONAS INFECTIONS—B. A. Waisbren and D. Lepley. Arch. Intern. Med.—Vol. 109:712 (June) 1962.

Presented is a method of treatment of severe *Pseudomonas aeruginosa* infections by the intravenous administration of polymyxin B, oxytetracycline, and gamma globulin. It is based on potentiation between polymyxin B and oxytetracycline against *Pseudomonas aeruginosa* and the potentiation of antibiotics by gamma globulin. The successful treatment of a case of bacterial endocarditis and a case of necrotizing papillitis, both due to *Pseudomonas aeruginosa,* suggests that this regimen may be worth trying in infections due to this bacteria that do not respond to other therapy.



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Tranquilizer Prevents Airsickness

Meprobamate, a mild tranquilizer, widely used, "affords significant protection against airsickness," medical researchers reported in the July 21 *Journal of the American Medical Association.*

John J. Franks, M.D., Lawrence J. Milch, Ph.D., and Elmer V. Dahl, M.D., Brooks Air Force Base, Texas, tested the drug among 441 airmen who volunteered for the study.

While a tranquilizer would not be desirable to prevent motion sickness in pilots or combat personnel, they said, it might be useful for passengers since the drug is noted for its low rate of adverse side effects.

"Furthermore, it may not be necessary to prescribe anti-motion sickness drugs for passengers receiving meprobamate for other reasons, at least for relatively short flights," they said.

In the study, the airmen were given identical capsules containing either meprobamate, meclizine, an effective motion sickness preventive, a combination of these two drugs, or simply sugar about two hours before a flight in a C-54, the researchers said. The airmen ranged from 17 to 20 years of age and had little or no flying experience, they said.

After an hour of straight and level flight, they said, the airmen were subjected to simulated turbulence, in which the plane pitched and yawed, rolled and turned, climbed and descended, for 10 to 25 minutes.

Forty-six per cent of the volunteers who had received the sugar pills became sick during their flights compared with 26 per cent of those who took meprobamate, 25 per cent of those who took meclizine, and 24 per cent of those who received both drugs, the researchers said.

"Our results indicate that meprobamate affords significant protection against airsickness equal to that of meclizine, and that a combination of these two drugs is not better than either drug alone," the researchers said.

The effectiveness of meprobamate is "surprising," the authors said. Despite the probable role of psychological factors in motion sickness, they said, tranquilizers previously tested proved of little value in preventing the syndrome.

However, they said, there is a distinct difference between the tranquilizers investigated earlier, all of which affect the involuntary nervous system, and meprobamate, which is classified as a muscle relaxant and does not affect the involuntary nervous system.

Since extensive trials during World War II, antihistamines have emerged as the most effective drugs for motion sickness. Meclizine is an antihistamine and like other antihistamines it also has a tranquil-

(Continued on Page 18)

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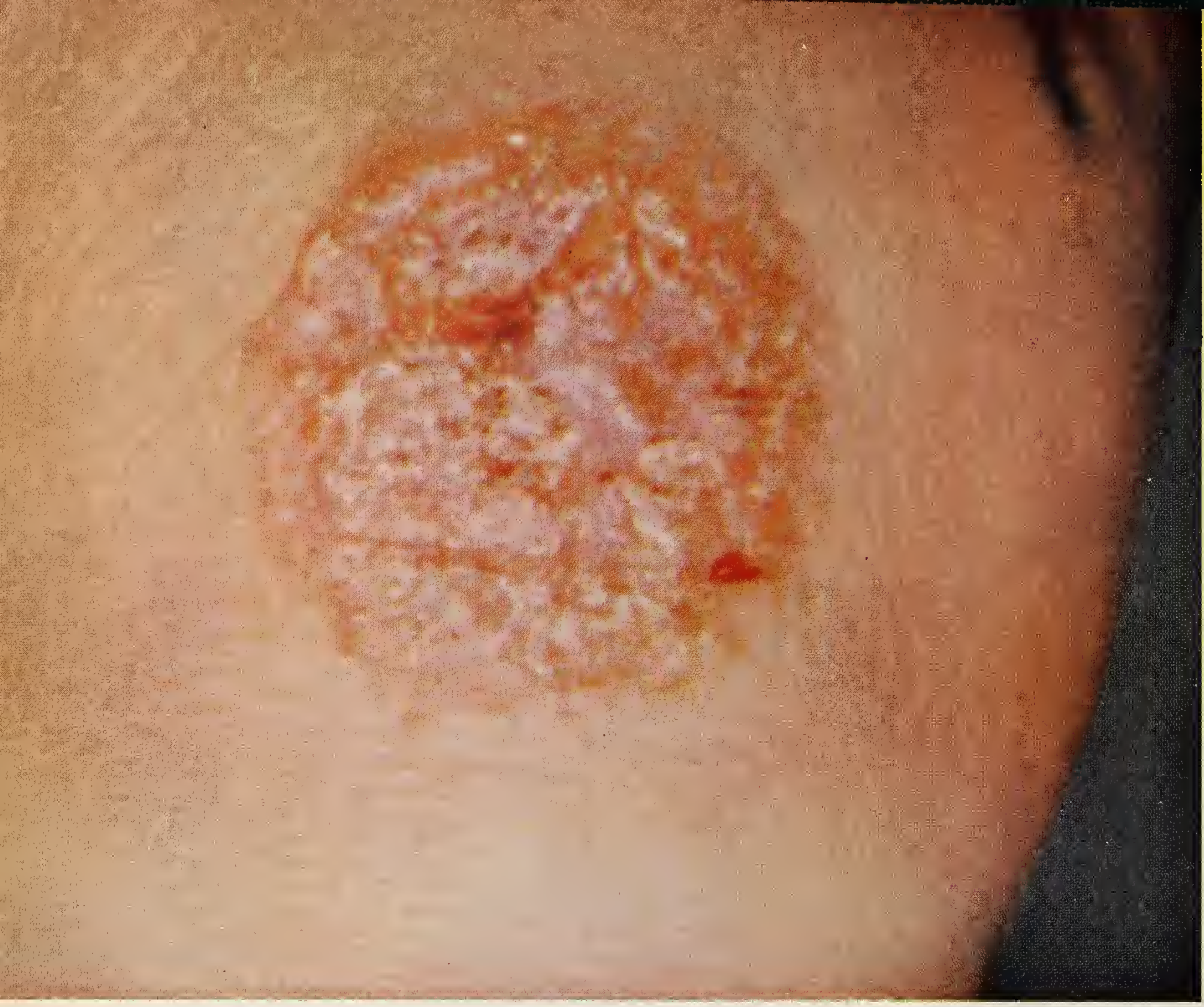

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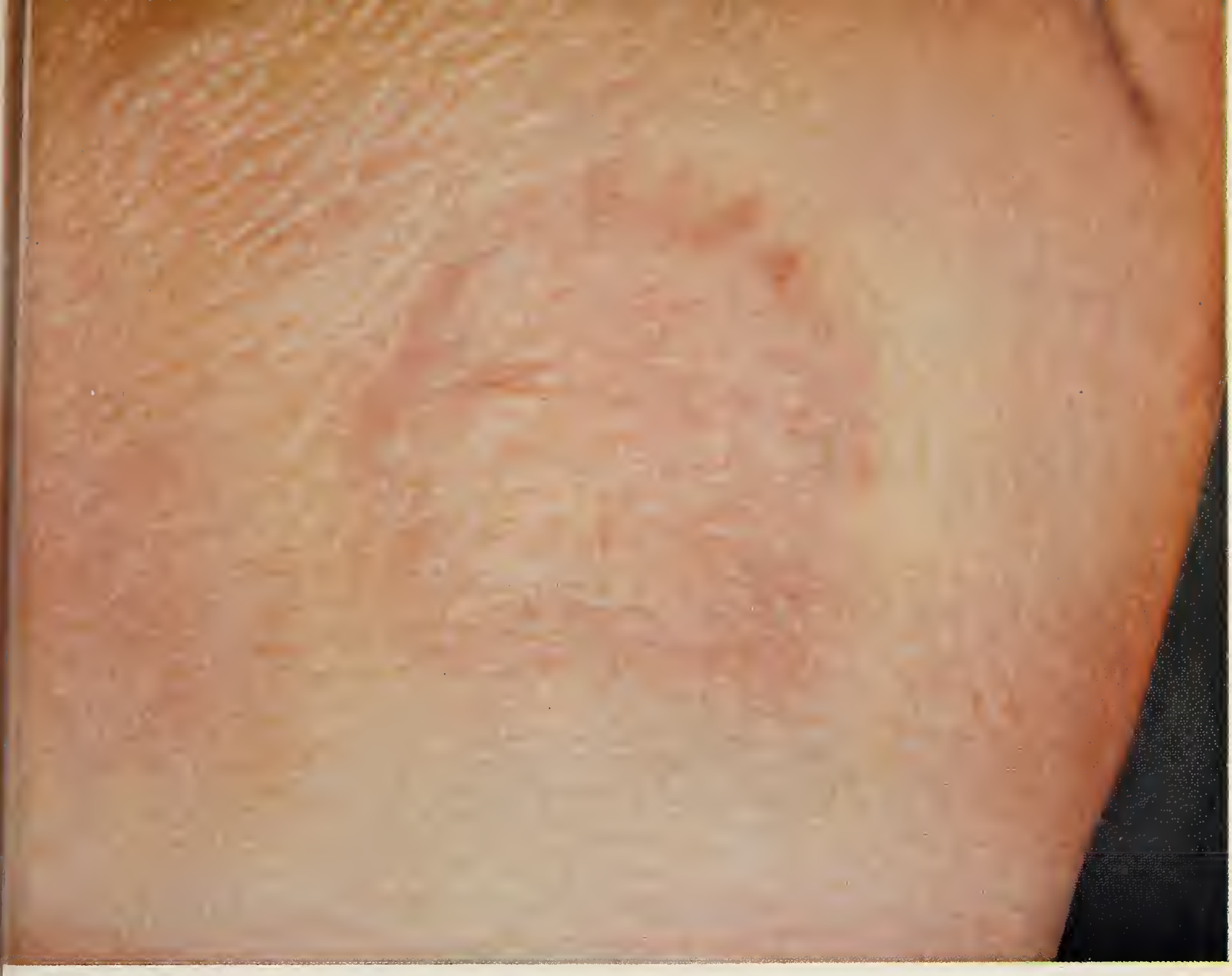

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Three Scientists Join A.M.A. Drug Department

Three medical scientists have joined the staff of the American Medical Association as part of the A.M.A.'s expanding program of providing information to physicians about drugs and their uses, it was announced recently.

Named to the post of drug documentation manager was F. R. Whaley, Ph.D., a chemist and specialist in the field of technical literature.

Appointed assistant secretaries of the A.M.A. Council on Drugs were Edward L. Platcow, Ph.D., pharmacologist, and Jeffrey Bishop, M.D., a practicing physician from Vancouver Island, British Columbia.

Dr. Whaley, a graduate of Northwestern University and of Johns Hopkins University in physical chemistry, has a long career as an industrial chemist and a specialist in setting up technical libraries through use of electronic equipment. He is chairman of the chemical literature division of the American Chemical Society.

Dr. Whaley will supervise the A.M.A.'s new program of collecting and storing information on drugs and drug therapy.

Dr. Platcow and Dr. Bishop will study research data on drugs and drug therapy and prepare reports for the *A.M.A. Journal* and *New and Nonofficial Drugs,* published annually by the A.M.A.

Dr. Platcow was assistant professor of pharmacology at Northeast Louisiana State College. Dr. Bishop is a graduate of St. Mary's Hospital of the University of London, England, and practiced in London for several years before immigrating to Canada.

Tranquilizer Prevents Airsickness

(Continued from Page 15)

izing effect. Its mode of action in preventing motion sickness has not been determined.

Meprobamate has no antihistaminic effects, but its tranquilizing effect may be somewhat similar to meclizine, the researchers said.

"On the other hand," they said, "the exposure of individuals with little previous flying experience to sudden, violent motion of short duration may provide a situation where tranquilization is uniquely effective."

The effectiveness of meprobamate against more prolonged motion remains to be determined, they said.

It also would be interesting to study mephenesin, another muscle relaxant, under similar conditions, they said, since this drug resembles meprobamate but has only a slight tranquilizing action.

The authors are affiliated with the Pharmacology/Biochemistry and Pathology Branches, School of Aerospace Medicine.

REFERENCES AND REVIEWS

Increased Activity of Some Folic Acid Enzyme Systems in Infectious Mononucleosis—J. R. Bertino, B. M. Simmons, and D. M. Donohue. Blood—Vol. 19:587 (May) 1962.

Glucose 6 phosphate dehydrogenase (G6 PD), and 3 enzymes involved in folic acid metabolism and thus important for cell replication were studied in the leukocytes of patients with infectious mononucleosis. C6 PD activity was less, while the levels of the folic acid enzymes were increased in infectious mononucleosis leukocytes when compared to normal leukocytes. One enzyme, dihydrofolic reductase, present in the infectious mononucleosis cells, has not been found in the leukocytes from normal blood. These findings are similar to the results obtained in acute and chronic myelocytic leukemia, and indicate that the atypical lymphocytes seen in infectious mononuclesosis are actively synthesizing DNA and should be considered immature cells or virus-infected cells.

* * *

Diagnosis and Treatment of Reversible Hypertension—T. Winsor, J. P. Medelman, J. H. Moyer, and G. M. Roth. Dis. Chest—Vol. 41:489 (May) 1962.

The diagnosis of pheochromocytoma is discussed. As drugs give only temporary relief, all the authors' patients are treated surgically. Methods to aid the diagnosis of occlusive renal artery disease, including percutaneous femoral arteriograms, translumber aortography, intravenous aortography, and intravenous pyelography, are reviewed. The current medical regimen for renal vascular hypertension is presented.

* * *

Hyperparathyroidism with Avulsion of Three Major Tendons—F. S. Preston and A. Adicoff. New Engl. J. Med.—Vol. 266:968 (May 10) 1962.

Hyperparathyroidism in a 33-year-old man presented with spontaneous avulsion of left triceps and both quadriceps tendons, and masqueraded as atypical arthritis. A parathyroid adenoma was removed and the quadriceps muscle was repaired. Possible direct effects of excess parathyroid extract (Para-thor-mone) on connective tissue are discussed.

* * *

Rectal Aminophylline—N. Traverse and M. S. Segal. Ann. Allergy—Vol. 20:182 (March) 1962.

A concentrated form of aminophylline (100 mg/cc.) administered by rectum was evaluated in 206 patients with bronchial asthma. Plasma theophylline levels were obtained in 16 patients who received the concentrated aminophylline, and the levels were found to be significantly higher than those of the other routes of administration, with the exception of the intravenous route. The intravenous route showed initially higher levels of theophylline, but after 2 hours the level of aminophylline was higher. The rectal route produced effective clinical results and good patient acceptance.

* * *

Surgical Correction of Total and Partial Anomalous Pulmonary Venous Connections—P. Zubiate, O. Magidson, and J. H. Kay. Dis. Chest—Vol. 41:518 (May) 1962.

Ten cases of anomalous pulmonary venous connection have been operated on and completely corrected without mortality during the last 2½ years. One representative case

(Continued on Page 29)

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REFERENCES AND REVIEWS

(Continued from Page 27)

is presented. Surgical correction under direct vision using cardiopulmonary bypass permits accurate unhurried correction of these defects.

* * *

Synergistic Activity of Penicillin and Isoniazid on *Mycobacterium Fortuitum* in Vitro—E. M. K. Viachulis and E. E. Vichner. Dis. Chest—Vol. 41:553 (May) 1962.

Penicillin acts synergistically with isoniazid against *M. fortuitum* and concentrations of each drug are therapeutically attainable. Synergistic effect was increased as penicillin concentration increased for a constant isoniazid concentration. Penicillin acts synergistically with isoniazid to prevent reduction of the oxidation-reduction indicator resazurin.

* * *

Culture Tube for the Separation of Anaerobic Bacteria—E. M. Stapert, W. N. DeWolff, and W. T. Sokolski. Amer. J. Clin. Path.—Vol. 37:667 (June) 1962.

The principal features of the new anaerobic culture tube are a capillary opening at the top of the tube (which limits the diffusion of oxygen into the fluid thioglycollate medium) and a protected stopcock at the bottom of the tube (from which the bottom portion of the culture can be withdrawn). This tube has been particularly useful in separating anaerobic bacteria from fast-growing and spreading aerobic bacteria.

* * *

Method of Filing Teaching Slides—D. M. Baer. Amer. J. Clin. Path.—Vol. 37:642 (June) 1962.

Microscope slides with teaching value may be filed in an ordinary 3 by 5 inch card file using 5 by 8 inch index cards which have been folded and stapled. Advantages are: Clinical data are written on the card, cards are inexpensive, the diagnosis need not be written on the slide, the odd-size slides are accommodated, and the file is readily expandable.

* * *

Role of Platelet in Fibrinolysis: A Sensitive Test for Fibrinolytic Activity—W. O. Reid, A. V. Somlyo, A. P. Somlyo, and R. P. Custer. Amer. J. Clin. Path.—Vol. 37:561 (June) 1962.

A sensitive assay of spontaneous fibrinolytic activity, the standardized serial thrombin time (STT), is described. Of 40 cases with thrombocytopenia, increased fibrinolysis was present in all 20 patients with active bleeding. In nonhemorrhagic thrombocytopenia, fibrinolysis was normal (11 cases) or decreased (nine cases). Good correlation was found between STT elevation and severity of bleeding. Postmortem fibrinolysis was absent in five cases of severe thrombocytopenia. It is suggested that (1) fibrinolysis plays a major role in thrombocytopenic bleeding, and (2) platelets contain a plasminogen activator in addition to anti-plasmin.

* * *

White Slide Dots: A Time Saving Method—J. W. Grayson, Jr. Amer. J. Clin. Path.—Vol. 37:644 (June) 1962.

White ink was substituted for black India ink as a dotting medium for cytologic and histologic slides. This technique greatly facilitates the location of areas of interest against the usual black background of the microscope.

* * *

Use of Indicator Calcein, Its Fluorescence, in Rapid Ultramicrotitration of Serum Calcium—C. S. Klass. Amer. J. Clin. Path.—Vol. 37:655 (June) 1962.

An ultramicrotechnique for the determination of serum calcium was developed. Ultraviolet illumination in the 3,660 Å. range, an ultramicrotitrator, and the indicator calcein,

(Continued on Page 31)

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Most Mothers Pleased at First Sight of Baby

The reaction of most mothers to the first sight of their baby is to smile weakly, a study of 500 deliveries showed recently.

The study was reported by Niles Newton, Ph.D., and Michael Newton, M.D., department of obstetrics and gynecology, University of Mississippi School of Medicine, Jackson, Miss., in the July 21 *Journal of the American Medical Association.*

While more than half of the mothers demonstrated a "weak accepting reaction" by smiling a little, they said, another 30 per cent were obviously "greatly pleased." Only 14 per cent appeared indifferent or displeased, they said.

Three-fourths of the mothers were fully conscious at the time of delivery, they said.

The physical experiences of labor, including the use of forceps and the length of labor, were not found to be related to the mother's reaction, the researchers said.

"The mother who was most likely to be very pleased at the first sight of her newborn was the mother who had stayed calm and relaxed in labor and who cooperated with her attendants," they said.

"She had received more solicitous care as indicated by having back pressure more frequently for backache. She more frequently had a good emotional relationship with her attendant and particularly desired to breast feed her baby. She was more likely to be pleased if she was a white woman with a tenth grade education or more."

The authors concluded:

"The findings suggest that mother love in human beings, insofar as it is visible the first time the mother sees the baby, may be more closely related to her own personality, social class, and inner calm, and to the kindness and friendliness of her attendants, than to traumatic physical experiences in the production of a baby."

What causes a mother to accept or reject her newborn child is just beginning to be investigated, and knowledge on the subject is extremely fragmentary, the two researchers pointed out.

However, previous studies have indicated some of the factors which may be involved, they said.

Under some circumstances consciousness at birth may influence the mother's acceptance of the offspring, they said. Some investigators have found a suggestive relationship between lack of pain-relievers and greater enjoyment of rooming-in care of the baby, they said.

"It is difficult to determine any normal human patterns in the highly artificial birth situation in the modern hospitals," they added.

Other factors which may be involved include separation after birth, previous childbirths, an abnormality in the mother or infant, and personality factors, they said.

REFERENCES AND REVIEWS

(Continued from Page 29)

provided for an accurate, reproducible, and rapid method. Twenty micoliters of serum are required for this technique.

* * *

PRELIMINARY REPORT ON PROPINAL, A NEW INTRAVENOUS, NONBARBITURATE ANESTHETIC AGENT — N. Nishimura. Anesth. Analg.—Vol. 41:265 (May-June) 1962.

Propinal (a derivative of guaiacol) was prepared as an emulsion with 0.1 per cent lecithin. It was administered to 200 patients during clinical anesthesia and proved to be an effective intravenous anesthetic agent without complications seen in other barbiturates. Respiration, circulation, and electroencephalographic changes were observed. These studies were conducted in Japan.

* * *

ENRICHED PROLINE-TWEEN AGAR—L. E. Juley, H. Walch, Jr., and E. Bird. Amer. J. Clin. Path.—Vol. 37:664 (June) 1962.

The authors describe a medium containing proline, thiamine, biotin, and Tween 20 that supports typical mycelial growth and chlamydospore formation by *Candida* species. It has the advantages of being reproducible, simple to prepare and inexpensive and of having an excellent degree of clarity for microscopic observation.

* * *

VARIABILITY OF SERUM CHOLESTEROL IN HYPERCHOLESTEROLEMIA—F. T. Billings. Arch. Intern. Med.—Vol. 110:53 (July) 1962.

A lawyer with hypercholesterolemia was under observation during 12 years, until his death. He lived a life characterized by irregularity and unpredictability. Serum total cholesterol levels ranged widely and seemed unrelated to treatment. In spite of atherosclerotic stigmata manifested by xanthomata, coronary artery disease, intermittent claudication, and repeated small cerebrovascular "strokes," he was active in his profession until his death, at the age of 68.

* * *

QUALITY CONTROL FOR SMALL HOSPITAL LABORATORIES—D. J. Campbell. Canad. Med. Ass. J.—Vol. 86:1069 (June 9) 1962.

Following completion of an 8-week course in training methods of determining glucose, blood urea nitrogen, bilirubin, and prothrombin time, laboratory aides were found to be reporting 65 per cent wrong results. After one year of a quality control program, whereby weekly unknowns were sent out, this error figure had been lowered to one out of five. The paper shows the benefit and necessity of a quality control program for small hospitals.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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New Techniques Spur Study of Brain

Through new techniques of brain exploration, medical scientists are learning more and more about human behavior.

Technological developments in medicine, pharmacology, and electronics have brought exciting advances in brain-mapping, according to an article in the August *Today's Health* magazine, published by the American Medical Association.

Tiny electrodes can be pushed deep into the human brain without damaging its tissues through holes burred in the skull, it said. Brain tissue has no feeling, it said, and blunt electrode guides push nerve fibers aside "like a knitting needle moving through a ball of loose yarn."

Scientists with probing electrodes have discovered and mapped emotional centers deep in the mid-brain—pinpoints of tissue that control pleasure, pain, hunger, thirst, sex, and other basic drives, the article said. By electrically stimulating these centers in animals and humans, it said, scientists have produced a gamut of emotional responses and are learning how these centers color and govern our behavior—how they remember, how they act under stress, and how, as a last resort to control disease, some of these tissues can be destroyed without damaging the rest of the brain.

Neurologists formerly believed that man's enlarged cortex, the brain's outer layer, gave him superior intelligence because it could encompass highly specialized regions for the control of highly specialized activities beyond the capacity of animal brains, the article continued. They were also convinced that if the use of one of these regions of the cortex was lost through injury or disease, the ability it controlled was permanently lost, it said.

However, recent exploration of the brain made possible by depth electrodes, shows that instead of strict specialization, the reverse is true, it said.

"Our enlarged cortex permits *dispersal* of function control," the article said. "It provides sheets of nerve tissue—networks of neurons, or nerve cells—in which various regions play some part in many different activities. True, there are focal centers for control; but if one section is knocked out or destroyed, another will try to compensate for the loss.

"Thus it is apparent that our cortex, complex and delicate as it is, has remarkable powers of reorganization and recovery. Brain surgeons can now operate on areas they formerly feared to touch."

Also with depth electrodes, brain-mapping scientists are penetrating deeper realms in the mid-brain, the article continued. Studies have shown that many emotional centers are densely packed into a layer of tissue at the core of the brain, known as the hypothalamus, it said.

"Here are the centers that make us boil with anger, tremble with fear, bolt in panic, strike out in rage, melt with love," it said. "They endow our world with life and colors and richness."

(Continued on Page 38)

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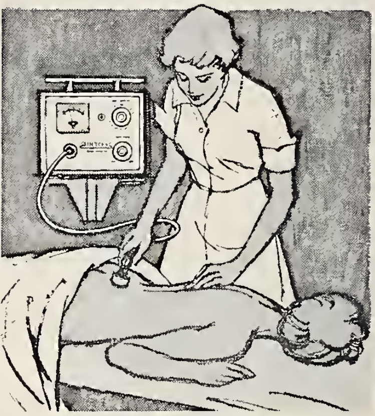
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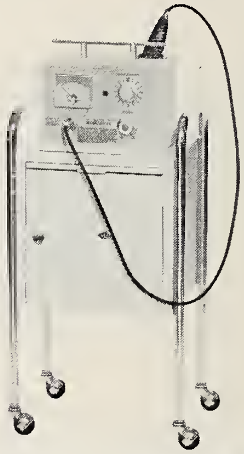
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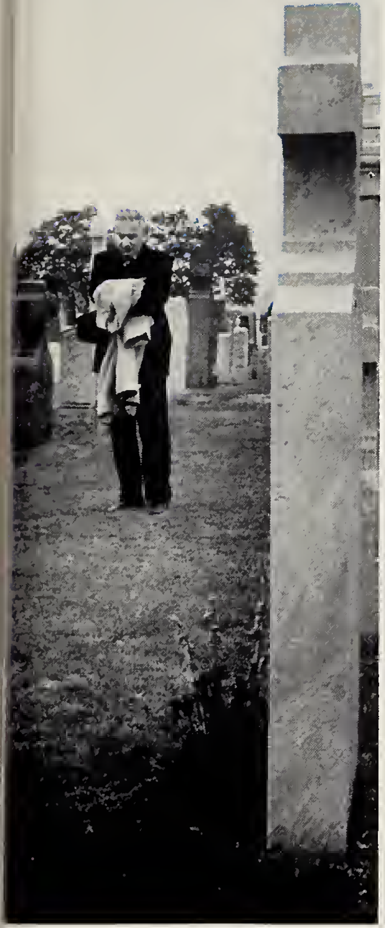

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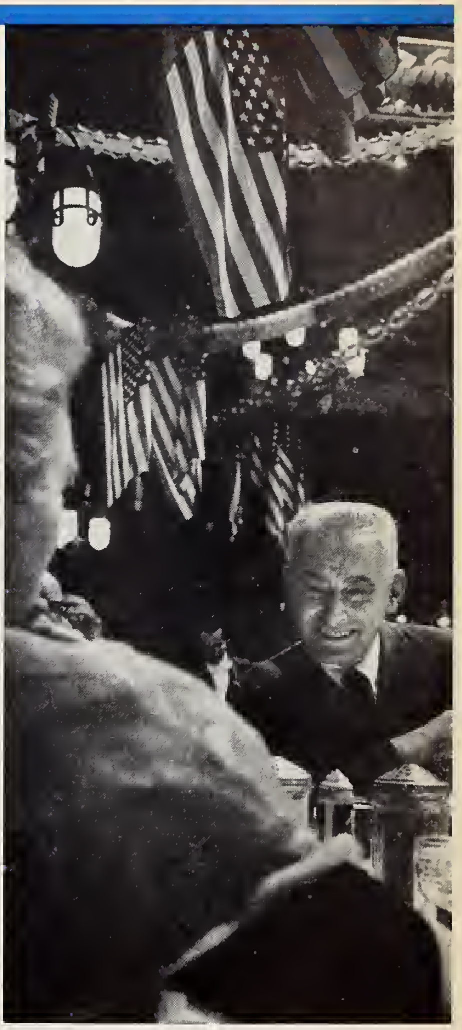

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Roddin, J.: Med. Times, July 1961

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Hootnick, H. J.: J. Am. Ger. Soc., 4:1021-1030, 1956

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Marshall, W.: S. D. J. Med. & Pharm., 8:151-153, 1955

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New Techniques Spur Study of Brain

(Continued from Page 33)

Research efforts in this area have bold objectives: to control the basic drives in humans, to correct imbalances that result in mental and emotional disorders and in all kinds of psychosomatic disease, the article pointed out.

"Depth electrodes are a priceless tool," it concluded. "They stir up and agitate nerve cells, thoughts, and feelings, and may restore disturbed mental and emotional balances, and give researchers an essential checking procedure for the analysis of drug effects.

"With their new techniques and knowledge of the brain, scientists are already able to help victims of nervous and mental disorders they could never help before. They stand on the brink of discoveries that may reveal some of the deepest secrets of the human mind and emotions."

The article was written by Robert O'Brien.

Late Look at Safety of Aspiration Biopsy—J. W. Berg and G. F. Robbins, Cancer, 15:826 (July-Aug.) 1962.

A previously reported study of aspiration biopsy of breast cancer was brought up to date, and new methods of comparison were tried to see if aspiration prejudiced the patient's later course. The only differences in prognosis elicited by the various methods favored rather than discouraged aspiration. There is no reason to consider this procedure detrimental to the patient.

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Urology	Two Weeks, Oct. 29
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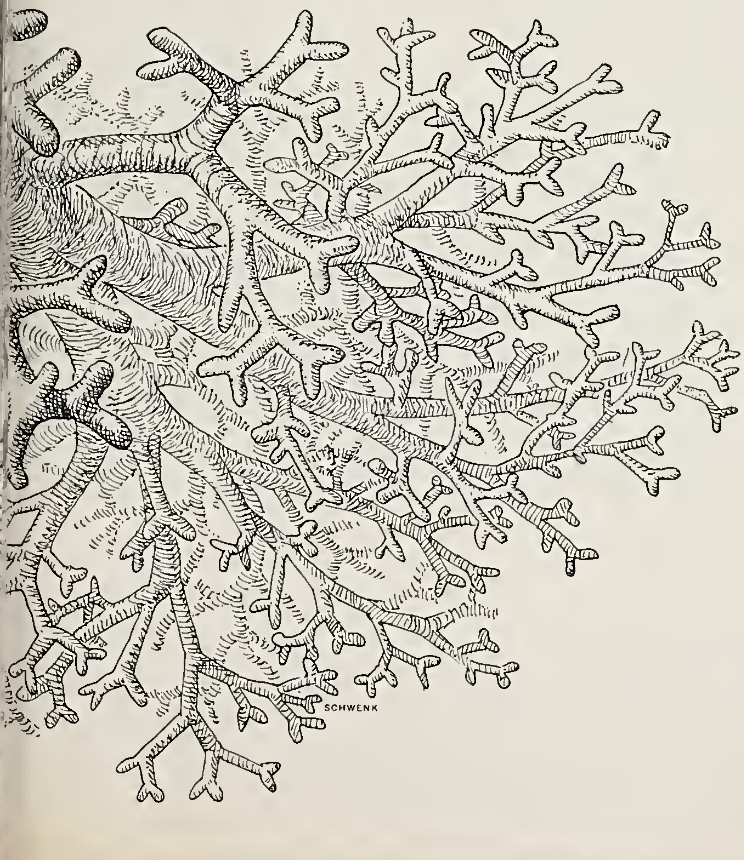

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A.M.A. Council Takes Stand On Fat in the Diet

The American Medical Association, through its Council on Foods and Nutrition, recently approved the concept of modifying the type and amount of fat in the diet as an experimental means of treating hardening of the arteries.

A council report, appearing in the August 4 *Journal of the American Medical Association*, is the A.M.A.'s first official statement on the controversial cholesterol question and culminates a three and one-half year study.

The report was not a recommendation for the general public. It was directed exclusively to physicians as a guide in treating patients.

A direct causal relationship between diet or blood fat concentrations and hardening of the arteries has not been proved, the council said, but added:

"In the light of present knowledge, it appears logical to attempt to reduce high concentrations of cholesterol and other serum lipids [fats in the blood] as an experimental therapeutic procedure."

Indications for modifying dietary fat are hypercholesteremia and hypertriglyceridemia, both of which have been "associated with" hardening of the arteries, the council said. The terms define conditions in which cholesterol or triglyceride, both fats, are present in the blood in abnormally high concentrations, it said.

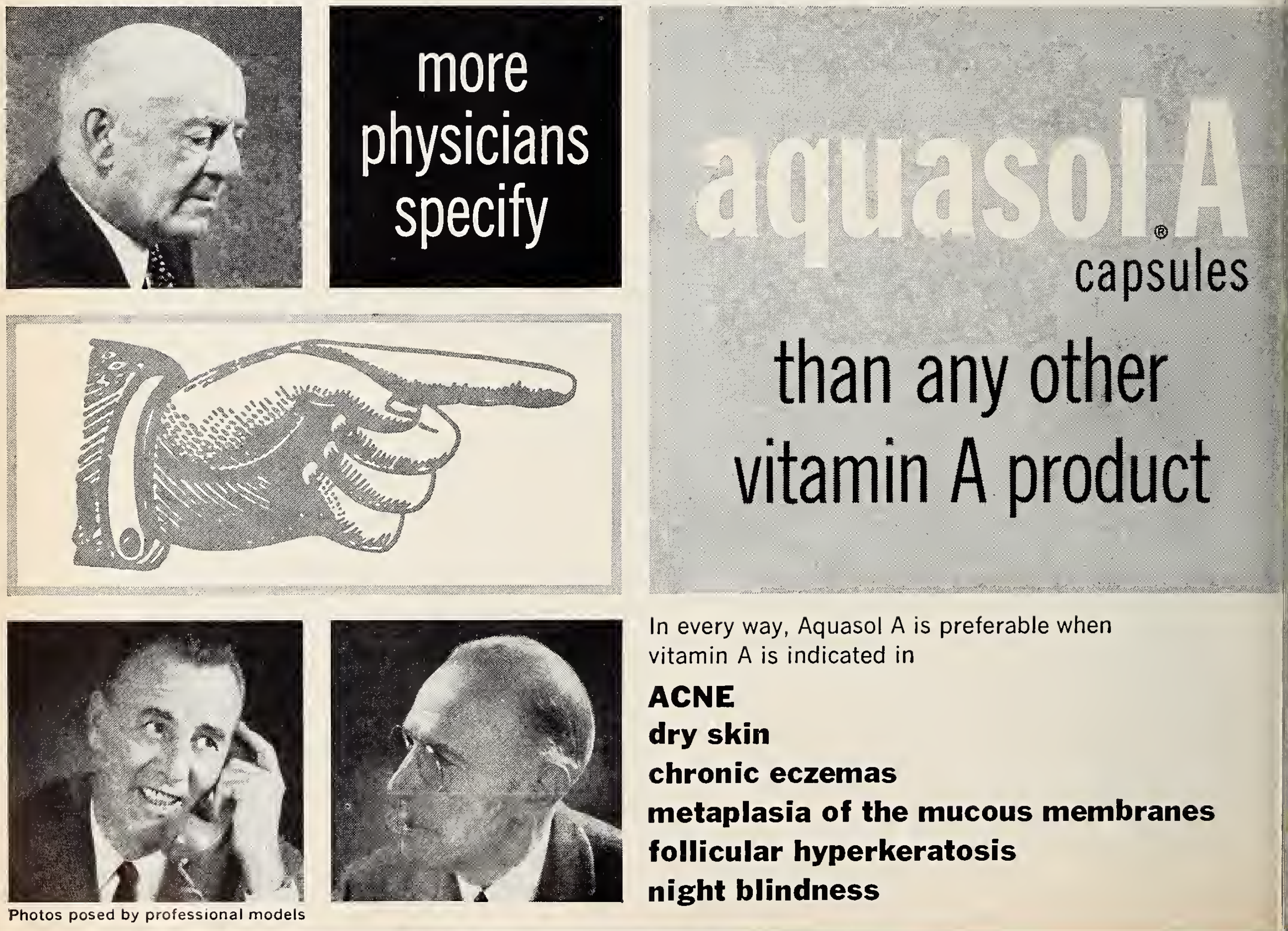
Regulation of dietary fat produces "marked effects" upon hypercholesteremia, the council said. Studies have established, at least in experimental conditions, that substitution of polyunsaturated vegetable oils for animal fats and saturated vegetable fats in the diet of man resulted in a reduction of blood cholesterol, it said.

The mechanisms by which polyunsaturated fatty acids lower blood cholesterol, however, are "poorly understood," it said.

The properties of fats are related generally to the fatty acids they contain, it was explained in the report. Fatty acids are classified as either saturated or unsaturated on the basis of their chemical structure. A saturated fatty acid contains all the hydrogen atoms it can hold while the polyunsaturates contain more than one unsaturated bond in their chemical linkage and a monounsaturated fatty acid has only one unsaturated bond.

"Actually, the terms 'animal' and 'vegetable' do not distinguish between fats which raise and those which lower serum lipid levels," the council said. "Both butter and coconut oil can be shown to raise serum cholesterol, whereas corn oil and whale oil can lower it."

The terms "saturated" and "unsaturated" also are unsuitable for distinguishing fats which raise or lower fat concentrations, it said, "since neither all saturated fatty acids nor all unsaturated fatty acids


more physicians specify aquasol A® capsules than any other vitamin A product

In every way, Aquasol A is preferable when vitamin A is indicated in

ACNE
dry skin
chronic eczemas
metaplasia of the mucous membranes
follicular hyperkeratosis
night blindness

Photos posed by professional models

are identical in their effects upon serum cholesterol concentrations in man."

Increasing interest in control of hypercholesteremia by regulation of dietary fat has developed because of evidence suggesting that serum cholesterol concentrations are related to hardening of the arteries, the council said. The amount and kind of dietary fat are among the most important factors controlling fat concentrations in the blood, it said. Statistical studies suggest that a relationship between diet, blood cholesterol and the rate of coronary artery disease exists in various populations, it said.

Many studies also have indicated a "close association" between elevation of blood triglyceride concentration and coronary artery disease, the council said. The cause of fat-induced hypertriglyceridemia has not been determined, it said, but some investigators have proposed that it is "probably a rare familial disorder."

The treatment of hypercholesteremia with a low-fat diet is "not effective," the council said. The effect of simply reducing fat intake is to lower blood cholesterol concentration but raise blood triglyceride concentration, it said.

"Increasing the ratio of polyunsaturated fat to saturated fat in the diet is the preferred method for treating the 'usual' hypercholesteremia," the council said.

Alteration of dietary fat is usually not necessary in the treatment of obesity on the basis of current scientific evidence, the council added.

The basic cause of obesity is an intake of calories in excess of what the body needs, the report said. Treatment consists of reducing total caloric intake, it said.

The report, entitled "The Regulation of Dietary Fat," also discusses the chemistry and metabolism of fats and other disease situations in which fat modification is indicated.

It was prepared by the ad hoc Committee on Dietary Fat Levels of the council. Members of the committee are David B. Hand, Ph.D., Geneva, N. Y., chairman; Elizabeth K. Caso, D.P.H., Boston; William J. Darby, M.D., Nashville, Tenn.; Charles S. Davidson, M.D., Boston; Paul L. Day, Ph.D., Bethesda, Md.; George V. Mann, M.D., Nashville, Tenn.; Robert E. Olson, M.D., Pittsburgh, and Philip L. White, Sc.D., director of A.M.A.'s department of foods and nutrition, Chicago.

PROGNOSIS OF HENOCH-SCHÖNLEIN NEPHRITIS—F. B. Roberts, R. J. Slater, and B. Laski, Canad. Med. Assn., 87:49 (July 14) 1962.

Only 2 of 50 children were found to have abnormal Addis counts 6 months to 8 years after having had anaphylactoid purpura. Also 23 of 35 patients with Henoch-Schönlein nephritis underwent remission while being followed. These results are significantly different from those reported by other current authors. This difference may reflect variable etiological factors in different centers.

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faster, more complete absorption

physiologically — provides all the known physiologically active isomers of the natural vitamin A complex which are believed to be directly utilizable in certain enzyme processes (in contrast to certain forms of synthetic vitamin A which require conversion in the body) for...
fully comprehensive results

gastronomically — with allergenic factors removed and free from "fishy" taste, Aquasol A is...
well tolerated and burpless

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capsules

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water-solubilized natural vitamin A per capsule

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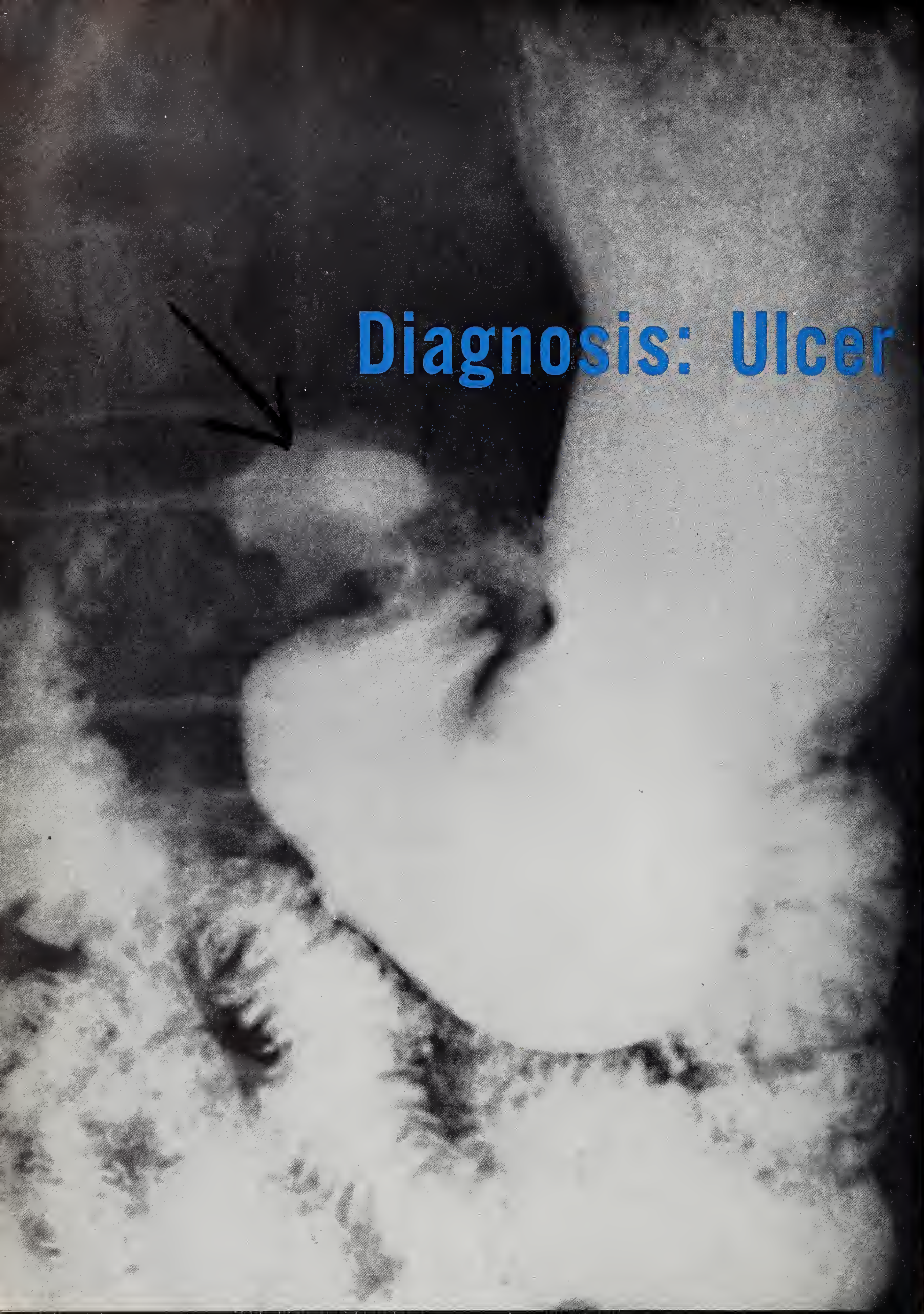

California
MEDICINE
OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION
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Volume 97 SEPTEMBER 1962 Number 3

The Newer Penicillins

HAROLD J. SIMON, *M.D., Ph.D.*, Palo Alto

• The newer penicillins give high promise of overcoming some of the few disadvantages of penicillin-G.

They fall into three groups: The alpha-phenoxy-penicillins; the penicillinase resistant penicillins; and the penicillins with enhanced activity against gram-negative bacteria.

The newer alpha-phenoxy-penicillins offer little over alpha-phenoxy methyl penicillin (penicillin-V). As the length of the side chain is increased, absorption and attainable serum concentration is also increased, but these are questionable benefits and probably not significant for therapeusis.

The penicillinase-resistant penicillins have once more brought almost all severe staphylococcal infections within therapeutic range. One of them, methicillin, must be administered parenterally. It is the agent of choice for the treatment of severe, penicillin-G resistant staphylococcal infections, and this is its only clinical indication. Another, oxacillin, which may be administered orally, is partially resistant to gastric acid degradation, but must be given on an empty stomach. It is most useful as prolonged therapy following methicillin, in the treatment of mixed hemolytic streptococcal-penicillin-G resistant staphylococcal infections, and as primary therapy for moderately severe penicillin-G resistant staphylococcal infections.

The third group is still mostly in the experimental stage, but some strains of Proteus, E. coli, Salmonella and Shigella are highly vulnerable to their action.

Toxic and allergic reactions to the newer penicillins, and crossed allergic reactions with penicillin-G, present unsolved problems.

PENICILLIN is a most interesting compound. It was the first of the truly effective antimicrobial compounds to be discovered and widely used. It is clearly the most effective agent available against susceptible bacteria. It is almost completely nontoxic. Consequently, there is a great deal of enthusiasm today because of the promise that newer penicillins may be at hand to overcome some of the deficiencies of the parent compound.

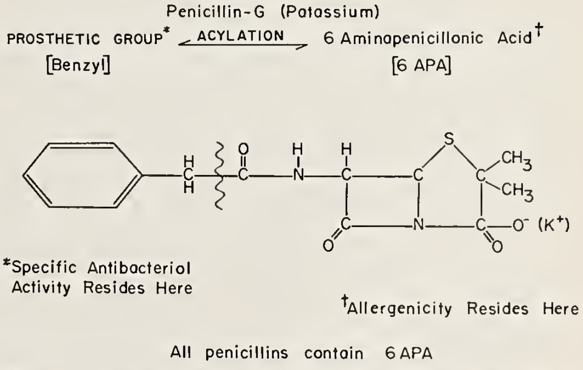

Penicillin-G (Potassium)
PROSTHETIC GROUP*
ACYLATION
6 Aminopenicillonic Acid†
[Benzyl]
[6 APA]
H
C
H
O
C
H
N
H
C
C
S
C
CH3
CH3
C
N
C
O⁻ (K⁺)
O
O
*Specific Antibacterial Activity Resides Here
†Allergenicity Resides Here
All penicillins contain 6 APA

Chart 1.—Structural analysis of penicillin-G potassium.

From the Department of Medicine, Division of Infectious Diseases, Stanford University School of Medicine, Palo Alto.

This investigation was supported in part by a research grant (E-3371) from the National Institute of Allergy and Infectious Diseases, National Institutes of Health, United States Public Health Service.

The methicillin (as Staphcillin®), oxacillin (as Prostaphlin®), and P-50 used in these studies was supplied through the courtesy of Drs. John Doyle and Eugene Morigi, Bristol Laboratories, Syracuse, New York.

Modified from an address, "Spotlight on Medicine," presented before a General Meeting at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

Before exploring some of the more important aspects of the newer penicillins, however, a guiding principle for antimicrobial therapy deserves to be stated clearly. No antimicrobial agent so far discovered or devised can compare with penicillin-G for effectiveness, economy, and safety. Moreover, many physicians using penicillin-G still find it difficult to apply generally available information on dosage, preparation, and route of administration to common clinical problems. It is therefore mandatory that the following remarks be interpreted in view of three basic principles:

First: The etiological agent in any disease process should be identified at all costs and its susceptibility to penicillin-G ascertained, preferably before therapy is begun, unless an urgent situation demands immediate action. The emphasis is on the word *urgent.* Such situations are rare in practice.

Second: Penicillin-G should be used whenever possible, and this usage should follow the principles developed over the past 20 years of experience with this agent.

Third: The newer penicillins should be approached with caution on several counts. Experience with these agents is limited, and the historical perspective for rational evaluation of the new agents is not yet available. Also, it is already established that the newer penicillins differ pharmacologically from penicillin-G. Absorption, distribution, and excretion data are still incomplete. However, some of these agents are excreted through the biliary system in significant amounts. With differences in their pharmacologic structure may come differences in toxicity. In addition, there are definite and significant differences in antibacterial activity between the various penicillins. Some of the newer penicillins were specifically devised to take advantage of such differences. Nevertheless, it has already been conclusively demonstrated that none of the newer homologues matches penicillin-G for anti-streptococcal or anti-pneumococcal activity. The use of the newer penicillins in such infections, already open to question on the basis of lesser activity than penicillin-G, must be carefully weighed. Differences in efficiency must be taken into account for calculation of dosages, time-schedules and routes of administration. Finally, sight must not be lost of the fact that the newer penicillins are more costly than penicillin-G by several orders of magnitude.

Nevertheless, even penicillin is still far from being the perfect antibacterial agent. Patients tend to develop allergic sensitivity to penicillin, and some of the reactions are extremely serious. Moreover, bacteria seem to learn chemistry fairly easily. Several bacterial species can produce enzymes, penicillinase and penicillin acylase, which destroy penicillin-G and some of its homologues. In addition, its activity against Gram-negative bacilli leaves much to be desired. Consequently, there are really four spheres in which research on the structure of penicillin homologues could offer significant contributions:

The development of a penicillinase-resistant penicillin molecule presented the most urgent problem. This seems now to have been solved. Methicillin (Staphcillin®), oxacillin (Prostaphlin®) and other semisynthetic penicillins have been developed by several pharmaceutical houses and are now available or are in the last phases of clinical trial.

Penicillins are needed to which patients do not manifest allergic sensitivity or allergic cross-sensitivity to other homologues. The prospect for a break-through in this direction seems very remote. The allergenic potential of the penicillins seems to reside in a very small fraction of the basic 6-aminopenicillanic acid (6-APA) molecule. This fraction seems to act as a hapten with serum or tissue protein to become a complete antigen. Penicillin residues without 6-APA are no longer active against bacteria. Penicillinase destroys the antibacterial activity but leaves the allergenic fraction intact. Penicillinase therefore has no place in clinical therapy. Probably every penicillin homologue will carry the risk of hypersensitization with it.

The problem of allergic cross-sensitivity between the penicillins is still under discussion. Most investigators believe allergic cross-sensitivity to be complete. The difficulty of eliciting clear histories of penicillin reactions in the absence of complicating factors, and the probable loss of reactivity over prolonged periods of time, make any attempt at sharp definition of allergic cross-sensitivity extremely difficult. A high proportion of patients claim penicillin allergy. Yet penicillin is present in milk, in vaccines and in the environment. Consequently, the true incidence of enduring penicillin allergy must be considerably smaller than is generally claimed, although transient hypersensitivity may occur frequently. Allergic reactions to the newer penicillins have already occurred and appear identical with those attributed to penicillin-G. A few instances of reactions to the newer penicillins have also been reported in patients whose past history of allergic sensitivity to penicillin seemed well defined. On the other hand, some patients with a history of reaction to penicillin-G have tolerated the newer penicillins. The problem of allergic cross-sensitivity is therefore not yet solved, and the prospects for solution seem remote.

The third problem concerns the administration of these agents. The oral route is always safer and usually more convenient than the parenteral route.

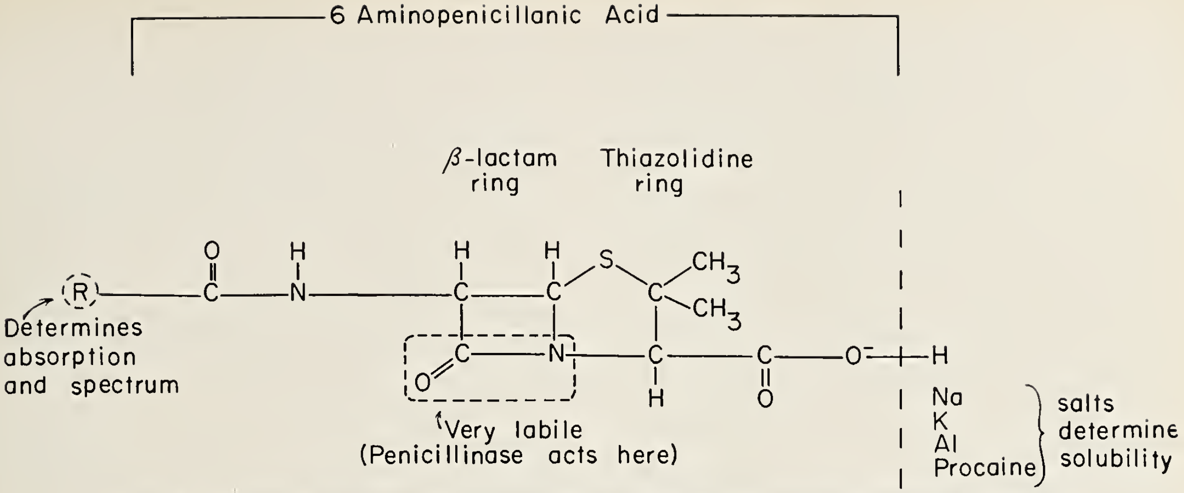
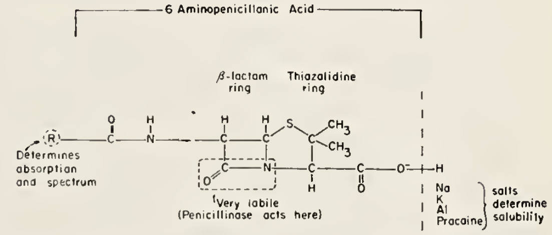

6 Aminopenicillanic Acid
β-lactam ring
Thiazolidine ring
Determines absorption and spectrum
Very labile (Penicillinase acts here)
Na
K
Al
Procaine
salts determine solubility

Chart 2.—Chemical formula of 6-amino-penicillanic acid and its relation to various side chains.

Consequently, penicillins are needed which overcome some of the defects of penicillin-G, can be administered by mouth at convenient intervals, and are quantitatively absorbed. The prospects are fairly bright. The whole group of phenoxy-penicillins—methyl, ethyl, and propyl—can be administered orally. They resist gastric digestion fairly well and are readily absorbed. The phenoxy-penicillins are destroyed by penicillinase. Oxacillin resists penicillinase-degradation and is absorbed following oral administration.

A fourth problem concerns the rather limited spectrum of the penicillins. Many physicians think of penicillin-G as being highly and exclusively effective against the Gram-positive cocci—pneumococcus, streptococcus, meningococcus, and some staphylococci. Penicillin-G, however, does possess significant activity against a variety of Gram-negative bacilli, although much higher doses must be employed to attain significant clinical effects. It seems desirable, therefore, to find a penicillin with decidedly enhanced anti-gram-negative bacillary activity. Several penicillin homologues with this characteristic have been synthesized and are now undergoing clinical trials. To date, however, they are still quite feeble. They are also susceptible to penicillinase. Moreover, severe diarrhea and monilial superinfection have already occurred. These are very similar to those occurring after tetracycline therapy. The broad-spectrum penicillins therefore seem to possess the antibacterial spectrum of the tetracyclines, only they are bactericidal where tetracyclines are bacteriostatic. These penicillins seem also to combine the advantages and hazards of penicillin therapy with the advantages and hazards of tetracycline therapy. In short, these broad-spectrum penicillins still leave a great deal of room for improvement.


6 Aminopenicillanic Acid
β-lactam ring
Thiazolidine ring
Determines absorption and spectrum
Very labile (Penicillinase acts here)
Na
K
Al
Procaine
salts determine solubility

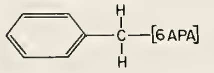
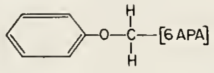
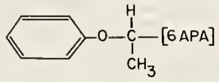
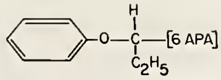
Name(s)	Prosthetic Group®	Chemical Designation
G		Benzyl-penicillin
V		α-Phenoxymethyl-penicillin
Phenethicillin Moxipen® Syncillin® Chemipen®		α-Phenoxyethyl-penicillin
Brocillin® (Broxil®)		α-Phenoxypropyl-penicillin

Chart 3.—The chemical formulae of the prosthetic groups of the phenoxy-penicillins.

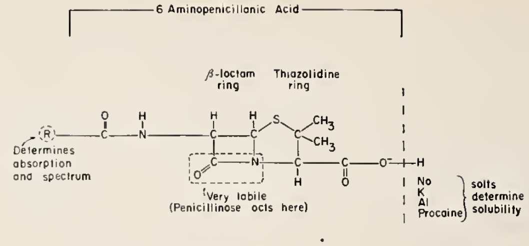
In order to understand something of the background and possible future of the newer penicillins, it seems desirable to digress for a moment into chemistry. The penicillin molecule was found to consist of three functional elements: The basic nucleus common to all penicillins is called 6-amino-penicillanic acid, or 6-APA. One part of this segment is a beta-lactam ring, the site of penicillinase action. By itself, 6-APA has no antibacterial activity. Nevertheless, the side chains which determine antibacterial activity and absorption are devoid of antibacterial activity unless coupled to 6-APA. It is these side chains that are being substituted to make the newer penicillins. The third component is one of several cations which chiefly determines solubility.

The three phenoxy-penicillins—methyl, ethyl, and propyl—offer several advantages over penicillin-G. They are readily absorbed when taken by mouth. They are at least partially resistant to gastric acid degradation. Serum concentrations following oral administration may briefly approximate concentrations achieved following the parenteral administration of penicillin-G. It is not clear whether this is reflected in tissue concentrations, however. The three phenoxy-penicillins differ from one another in the fact that, following the same dose, peak serum concentrations are achieved earlier and range higher as the length of the side chain is increased from methyl through ethyl to propyl. Unfortunately, excretion is also more rapid in direct relationship to the length of the side chain. Consequently, high serum concentrations are maintained for a shorter time between doses. The importance of this "time under the curve" in serum is not clear. It is not known whether sustained antibacterial serum concentrations are required for the control of infections, or whether intermittent peak concentrations are desirable. The chances are that both may be important in diverse clinical conditions. Since tissue concentrations persist longer and fluctuate less, the emphasis on serum concentrations is probably misplaced anyway. Moreover, it is very likely that tissue concentrations are more important than serum concentrations. These pharmacological data should be remembered when the phenoxy-penicillins are employed.

The antibacterial spectrum of the phenoxy-penicillins does not differ significantly from that of penicillin-G, although most susceptible strains require greater concentrations of the phenoxy-penicillins for inhibition. The differences are slight, and the dosages usually recommended make up for these disparities.

The disadvantages of the phenoxy-penicillins lie in their cost, which is much greater than for penicillin-G, and in their susceptibility to penicillinase. They are somewhat more resistant to this enzyme than is penicillin-G, but the differences are probably of no clinical significance. Patients with allergic sensitivity to penicillin-G should be presumed sensitive to these newer agents also. To date, there have been no new toxic reactions reported for this group of compounds.

The most exciting aspect of the phenoxy-penicillins is not their antibacterial activity; it is the fact that these agents represent an almost immediate application of basic chemical research to clinical medicine. Less than three years have elapsed since the isolation of 6-APA. These newer penicillins already have been available for over two years. Even at the time of this writing, a new compound, alpha-phenoxy-benzyl penicillin (Penspec®), is making its appearance in England. It seems to promise still greater achievements in the phenoxy-penicillin range, but experience is severely limited. The synthesis of these compounds opened an entirely new field, and the next substance truly represents a breakthrough for clinical medicine.


6 Aminopenicillanic Acid
β-loctam ring
Thiazolidine ring
R
Determines absorption and spectrum
O
C
H
N
H
C
H
C
S
C
CH3
CH3
C
N
O
C
H
C
O
O⁻
H
Very labile (Penicillinose octs here)
No
K
Al
Procaine
salts determine solubility

SOME IMPORTANT PENICILLINS

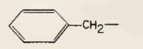
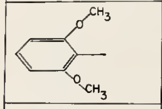
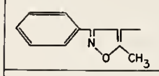
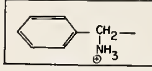
Prosthetic Group ®	Name(s)	Route of Administration	Penicillinase	Spectrum
	Benzyl-penicillin Penicillin G	Oral, intramuscular, intravenous	susceptible	Gram positive cocci High doses for some Proteus, Salmonella
	Methicillin Staphcillin®	Intramuscular, intravenous	resistont	Penicillin-resistant staphylococci
	P-12 Prostaphlin® Oxacillin	Oral, intramuscular	resistant	Penicillin-resistant staphylococci other gram positive cocci
	P-50 Penbritin®	Oral, intramuscular	susceptible	E. coli, Salmanella, Shigella, some Proteus, Grom positive cocci

Chart 4.—Structural and functional analysis of the penicillin molecule and some of its more important homologues. (Modified from Dowling, H. F., C. Clin. Pharm. Therap., 1961, 2:573, with kind permission of C. V. Mosby Co.)

Methicillin, 2,6 dimethoxyphenyl-penicillin, (Staphcillin®), was the first of the new penicillins to possess essentially complete resistance to penicillinase. Essentially all clinically important instances of penicillin-resistant staphylococcal infections are due to penicillinase elaboration on the part of the infecting micro-organisms. Consequently, physicians confronted with penicillin-resistant staphylococcal infections have been given a new and potent weapon. Enthusiasm was limited initially by an apprehension that the experimental results might not be fulfilled in actual practice. These doubts are now dispelled.

Methicillin is highly effective against all but approximately 1 per cent of penicillin-resistant staphylococci. Almost overnight, multiple antimicrobial regimens have become obsolete. Vancomycin, the agent upon which we had to rely previously for bactericidal anti-staphylococcal activity in penicillin-resistant infections, is now relegated to a minor supporting role. Methicillin is the agent of choice for all serious staphylococcal infections unless allergic sensitivity precludes its use. Experience to date already indicates that methicillin, properly used, once again restores the effectiveness of anti-staphylococcal therapy to the high level experienced when penicillin-G first became available. It must be remembered that mortality from staphylococcal infections in the middle and latter 1950's was not significantly less than it had been before the introduction of penicillin-G. The key, however, lies in the phrase *properly used.*

Methicillin must be administered parenterally. The preferred route is by means of intermittent intramuscular or intravenous injections. One gram every three to four hours is the recommended adult dose. Intravenous injections may be made directly into the vein, or into the tubing of a continuous infusion of saline or dextrose in water. On certain occasions, however, it may become necessary to use a continuous infusion of methicillin. This requires precautionary measures.

Solutions of methicillin are quite unstable. Initially, dosages of 6 to 8 grams of methicillin given intramuscularly or intravenously in divided doses or by continuous infusion, seemed to be satisfactory on the basis of experimental and clinical data until several treatment failures occurred. Even now, some physicians order dosages of 12 to 20 grams daily. Since severe staphylococcal infections usually require several weeks of sustained therapy, and the drug is very expensive, this development seemed to threaten the widespread use of methicillin. At least some of this confusion is due to inactivation of methicillin in the infusion bottle.

It is not generally appreciated that the pH of normal saline solution is usually close to 6.0, and the pH of 5 per cent dextrose in water may range to 4.5, depending on the amount of gluconic acid formed during sterilization or on the shelf after exposure to light or heat. Methicillin is highly unstable at acid pH and is readily inactivated unless infusions are buffered. I generally use sodium bicarbonate in amounts sufficient to turn pH test paper strips to pH 7.2 to 7.4. Generally, 20 to 25 ml. (18 to 23 mEq.) per liter of infusion suffice for this purpose. This seems cumbersome. Nevertheless, it seems the only way to administer this agent by means of continuous infusion without excessive inactivation. Additionally, the solutions should not be made up until immediately before use. Even though alkalinization is carried out, the infusion should be changed at least every eight hours. Unless these directions are followed, higher dosages are necessary, with greater expense to the patient.

TABLE 1.—*Administration of Methicillin*

INTRAMUSCULARLY: 1 gram every three or four hours.

INTRAVENOUSLY: 1 gram every three to four hours directly into the vein or into the tubing of a continuous infusion.

INTRAVENOUSLY:* At least 6 to 8 grams per day by continuous infusion.

INDICATIONS: Only for penicillin-G resistant staphylococcal infections in patients not known to have allergic sensitivity to penicillin-G.

*CAUTION: Alkalinize infusions to pH 7.2 to 7.4. Change infusions every eight hours. Do not add other drugs to infusion.

Intramuscular administration is generally safe and reasonably well tolerated. However, patients with bleeding tendencies do not tolerate the intramuscular route well. Patients with diabetes mellitus, patients in shock and those with other circulatory disorders may not absorb the drug from intramuscular depots. Intravenous administration then becomes the method of choice.

One other note of caution is indicated. The lability and chemical reactivity of methicillin make it unwise to use vitamins or other drugs in the same infusion.

Methicillin has three disadvantages: It must be given parenterally; it is either completely degraded or not absorbed from the intestinal tract; it possesses only feeble activity against bacteria other than penicillin-resistant staphylococci. Moreover, allergic sensitivity to penicillin probably means sensitivity to methicillin also. Consequently, the only indication for methicillin seems to be penicillin-G resistant staphylococcal infections occurring in patients not allergic to penicillin. Methicillin is expensive and unstable. Therefore, while an extremely useful addition to the anti-staphylococcal armamentarium, it still leaves much to be desired.

Methicillin is primarily cleared through the kidneys. Very little appears in the bile. Evidence of renal impairment has already been reported in a few patients to whom methicillin was being administered. One case of bone marrow depression has recently been reported, and I have seen another in which this condition was attributed to methicillin. There may be other as yet undiscovered toxic hazards. As with all new drugs, continuous vigilance is the only safeguard we can offer our patients.

More recently, a group of semisynthetic penicillins has appeared whose chief virtue overcomes one of the serious defects of methicillin. This group, of which oxacillin (Prostaphlin®) is the prototype, combines penicillinase-resistance with adequacy of absorption following oral administration. Milligram for milligram, these agents are more effective than methicillin. This greater activity extends across the penicillin-G-resistant staphylococci to the other Gram-positive cocci but still does not equal the activity of penicillin-G against these micro-organisms. Experience with this newer penicillin has been almost completely limited to use of the drug by mouth, although parenteral forms are being tested. It has already become clear that severe staphylococcal infections can be treated with oxacillin therapy alone, although this is not yet recommended. The intelligent use of these agents also requires some understanding of their pharmacological properties.

Oxacillin is subject to degradation by gastric acid and must be administered on an empty stomach. In addition, serum concentrations are not well maintained. Dosages should therefore not be spaced more than four hours apart—at least for serious infections and until more data become available on tissue concentrations. In general, we recommend doses of 100 mg. by mouth per kilogram per day in divided doses at four-hour intervals spaced around meals. Administration should take place no less than one hour before nor sooner than two hours after meals. (If daytime meals fall at 8 a.m., 12 noon, and 7 p.m., the dose sequence runs something like this: 7 a.m., 11 a.m., 3 p.m., 6 p.m., 10 p.m., 2 a.m.) Effective serum concentrations are maintained for slightly more than two of the four hours. If administration coincides with a meal, however, essentially no activity is detectable in the serum.

The precise role of the oxacillin group of penicillins is still difficult to assess. Experience is still too limited and the use of these antibiotics as first line agents in the treatment of severe staphylococcal infections—while probably appropriate—cannot yet be recommended. Three spheres of usefulness can now be defined, however:

1. Their main use lies in the prolonged treatment of severe, penicillin-resistant staphylococcal infections after parenteral methicillin therapy has allowed some stabilization of the clinical situation.

2. Moderately severe infections—osteomyelitis, progressive cellulitis and pyelonephritis, for example—can be treated with oral administration of oxacillin alone, always provided that careful follow-up cultures and clinical observation are carried out and care is taken not to interfere with absorption.

3. These agents are also most useful for the treatment of mixed hemolytic streptococcal-staphylococcal infections when the staphylococcal component is penicillin-G-resistant. Examples include atopic eczema, impetigo and streptococcal pharyngitis. Despite the clearly penicillin-G-susceptible nature of Group A hemolytic streptococci, penicillin-G may fail when penicillinase-producing staphylococci share the infected sites. Such failures are presumed due to local inactivation of penicillin-G by the penicillinase that is produced. The small amounts of penicillin usually used in such infections are inadequate to overcome this form of biological antagonism. Oxacillin and its congeners are definitely indicated in such situations and have proven highly satisfactory.

TABLE 2.—*Administration of Oxacillin*

Orally: 100 mg. per kilogram of body weight per day divided into four-hourly doses and spaced around meals.*

Intramuscularly: 50 mg. per kilogram of body weight per day divided into four-hourly doses.†

*Caution: For oral use, administer on an empty stomach. Oral therapy administered no less than one hour before meals nor sooner than two hours after meals.

†Oxacillin not yet available for parenteral administration.

Unfortunately, allergic reactions have already been observed, and allergic cross-sensitivity can be expected in patients who are sensitive to penicillin-G. Diarrhea, epigastric pain, nausea, and bitter taste occur commonly at the doses recommended. Some instances of increases in serum glutamic oxaloacetic transaminase (SGOT) activity have been reported. The elevated SGOT reverted to normal when the drug was discontinued. These drugs are also much more expensive than penicillin-G. Nevertheless, they promise to be very useful.

Other developments in the penicillin series seem potentially to have even greater promise for the future. Penicillin-G has been known for its activity against some strains of Proteus, E. coli, and Salmonella. Most of these anti-gram-negative bacillary activities are more striking in the test tube than on clinical application. Very recently a new penicillin has been synthesized in which the anti-gram-negative bacillary activity of penicillin-G has been enhanced. The importance of this development cannot be overemphasized in view of the progressive increase and severity of such infections occurring in hospitals.

The prototype of this group is alpha-aminobenzylpenicillin, (Penbritin®), or P-50. P-50 retains most of the anti-gram-positive coccal activity of penicillin-G. In addition, however, it is significantly more effective than penicillin-G against many strains of Proteus, most strains of Salmonella and Shigella, E. coli and Klebsiella-Aerobacter. P-50 is useless against other strains of Proteus and Pseudomonas. It is destroyed by penicillinase. P-50 therefore combines the bactericidal properties of penicillin-G with the broad spectrum coverage of tetracycline. Unfortunately, P-50 does not come as an unmixed blessing.

Clinical experiences are still meager. Nevertheless, typical penicillin rashes are already attributed to P-50. Their incidence cannot be evaluated thus far, but seem no less than with penicillin-G. Fulminant diarrhea and moniliasis have also been encountered. Consequently, while P-50 seems to combine the beneficial attributes of penicillin-G and tetracycline, it also adds their major side effects. Moreover, swelling of the mouth and lips has been seen in experimental animals, but not yet in human beings. This completely new reaction once again emphasizes the potentiality for new reactions inherent in all new drugs no matter what their genealogy.

Dosage schedules are not fully established. This agent is still in short supply and will undoubtedly be very expensive. Nonetheless, it is the first of what promises to be a most interesting and useful series of penicillins. Their chief virtues will lie in their anti-gram-negative bacillary activity. Several other preparations are now undergoing clinical trials, but none is as close to P-50 with respect to clinical applicability.

Pharmacologically, the newer penicillins differ from penicillin-G in at least one major category. They are all more or less excreted in the bile. Renal excretion is less prominent, and new pharmacological possibilities are presented.

Biliary excretion of active drug might lead to internal recirculation and cumulation. Hepatic dysfunction, never of consequence with penicillin-G, might seriously affect the clearance of the newer compounds. The need for hepatic participation in their metabolism sets the stage for potential hepatic and other toxicities. These considerations must be weighed when the new penicillins are used.

The smaller fraction of renal excretion also influences one other aspect of penicillin therapy. Probenecid (Benemid®) blocks the renal clearance of penicillin-G. The addition of probenecid to penicillin-G therapy increases both the peak concentrations attained and the duration of penicillin-G persistence in body fluids. Interestingly, probenecid also increases and prolongs significantly the serum concentrations of the newer penicillins. This property might be used to make smaller doses stretch further. In general, however, the use of probenecid cannot be recommended. It is a sulfonamide derivative and hypersensitivity reactions are not uncommon. Added to those associated with penicillin, these reactions would raise the risk of side effects to high orders of probability. Besides, as was previously noted, the significance of high or sustained serum concentrations is still unknown.

The vital question of bacterial resistance to the penicillinase-resistant penicillins cannot yet be answered fully. Very few methicillin-resistant coagulase positive staphylococci have been recovered from treated patients. Coagulase-negative staphylococci, on the other hand, have developed very high orders of resistance *in vitro* and *in vivo*. Coagulase-positive staphylococci have been rendered partially resistant to methicillin *in vitro*, but seem to lose some of their virulence in the process. Unfortunately, resistance to methicillin seems to cross with resistance to the other penicillinase-resistant agents. The resistant strains do not destroy the newer penicillins, but seem instead to become drug-indifferent. On the basis of this evidence, therefore, methicillin and allied resistance problems may once again rise to plague physicians.

Since methicillin is used almost exclusively in hospitals, it was anticipated that the appearance of resistant strains would occur first and be chiefly limited to hospital settings. Restriction of this drug was therefore rational. The development of oxacillin and its congeners and the cross-resistance problem between these and methicillin casts a new light on the problem. It is likely that many ambulant patients will be treated inadequately. Resistant strains may therefore appear and accumulate in the community as well as in the hospital. This would duplicate past experiences with other antimicrobial agents. Consequently, it becomes vitally important to use these potent, valuable agents only on specific indication, in effective doses and for long enough periods in order to minimize the emergence of resistant bacterial strains.

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Standards of Therapy for Tuberculosis, 1962

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• The progress and changes in management of tuberculosis are extensive and dramatic. Chemotherapy now leads the list of methods, and combinations of drugs containing isoniazid are the most effective. The use of such drugs in chemoprophylaxis has a new and expanding basis of value.

The other methods of therapy are considered to be adjunctive. Among them, pulmonary resection is of greatest value, although needed less often. Rest may be less complete than once was prescribed, and of shorter duration; exercise may be prescribed sooner and be more vigorous.

Rehabilitation is a part of treatment. It may be physical, mental, and social restoration or training. It may often be initiated in the early phases of treatment. The methods depend on the individual, the objective, and the pulmonary disease.

THE PROVED and amazing results of long-term specific chemotherapy have relegated all other methods of treatment of tuberculosis to a secondary, adjunctive position. Every other type of treatment, including rest, exercise, pneumotherapy, surgical collapse, excision, sanatorium care, home care, isolation methods and rehabilitation has been modified or minimized in one or more ways by use of specific drugs.

There are still unsettled problems in the use of rest, surgical treatment and chemotherapy, but this report will briefly discuss only the currently accepted opinions.

The major requirement for optimal therapy is a physician who has ultra-modern knowledge of diagnosis and treatment of tuberculosis, since the best chance for control of the disease and education of the patient is at the very start. Bacterial conversion, anatomic healing, elimination of symptoms, rehabilitation, economic protection, and happiness may depend on the program of therapy and the plan that is made for the future.

Other prime principles of treatment are to find the cases of tuberculosis, to place the patients where optimal care is available, and to arrange the whole program in a way which satisfies the patient, his associates, his pecuniary resources and the public health rules.

SPECIFIC CHEMOTHERAPY

The major methods of treatment are as follows: "Chemotherapy" is the term used for treatment with chemicals, or antibiotics. It can also be called "antimicrobial" or "antibacterial" therapy. There are a number of such drugs which have a specific effect on the tubercle bacillus. The ones used most commonly are isoniazid, the streptomycins, and aminosalicylic acid (para-amonisalicylates). Other drugs which either have less effect or more serious toxicity include pyrazinamide, cycloserine, viomycin, kanamycin, thioamide, and tetracycline. (Streptovaricin and thiocarbanidin are no longer in use.)

Streptomycin (SM) became commercially available in 1946, the para-aminosalicylates (PAS) in 1949, and isoniazid (INH) in 1952. All the information on their usage in a chronic disease has been observed, analyzed and reported in the few years since then. Our knowledge of drug dosage, toxicity and clinical effectiveness has been hastened by the cooperative studies of the Veterans Administration-Armed Forces group, the U. S. Public Health Service, the British Medical Research Council, several pharmaceutical houses and many physicians associated with hospitals or private medical groups.

The *mode of action* of the drugs varies, but all are chiefly considered to be bacterial suppressants, and perhaps partly bactericidal. They are delivered to the lesions by the circulating blood and are present in the "tissue juices," but isoniazid is the one that goes most freely into the cells and spinal fluid.

The various drugs have been prescribed in many different ways. Current practice includes the following methods:

1. A combination of two drugs for lesions which are active but do not constitute an emergency. This regimen and class includes most cases of pulmonary tuberculosis. The best combinations are INH and PAS, or INH and SM. Two drugs are also used when there is allergic sensitivity or intolerance to a single drug (often PAS).

2. A combination of three drugs (INH, PAS and SM) for selected cases of acute massive pulmonary disease, or acute hematogenous disease. (Some clinicians prefer to use three drugs for all cases, but

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Submitted March 16, 1962.

for varying periods of time; others feel that there is no advantage of three drugs over two. It is difficult to prove such an advantage, and data compiled by the Veterans Administration indicate that the results of INH plus PAS are as good as those obtained with a triple drug regimen.)

3. The use of more than three drugs in cases of known (or suspected) resistant bacilli.

4. The addition or substitution of secondary drugs in cases with poor clinical response, even though the bacilli are susceptible in cultures.

Only a brief summary of data on each drug will be given here.

Isoniazid is given in tablet form, three times a day, usually in doses of 300 mg. per day for adults. A Veterans Administration research protocol is now testing the toxicity and value of 300 mg. once a day. The use of higher doses of INH has been recommended, especially for so-called "rapid inactivators," but its therapeutic superiority is controversial. INH is well tolerated, very rarely produces an allergic reaction, and is rarely toxic in ordinary doses. Large doses may cause neuritis from vitamin B_6 deficiency, but this condition may be prevented by daily use of B_6 (pyridoxine). INH has become known as the most potent and indispensable factor in any combination of drugs.

Streptomycin is an antibiotic which is given intramuscularly, two or three times a week (or daily) in doses of 0.5 to 1.0 gm. It can be given as streptomycin sulfate (which may be toxic for the vestibular portion of the eighth nerve) or as dihydrostreptomycin sulfate (which may affect the auditory portion). These serious toxic effects are not frequent with two or three doses a week, but both compounds produce a transient mild irritation of the peripheral nerves or central nervous system in about a third of the patients (paresthesias of the face, headache, somnolence, etc.). Allergic reactions occur in a small fraction of 1 per cent. There is a current shift away from dihydrostreptomycin because of reports of occasional and often subclinical hearing loss from even a few doses, and production of the drug is now limited. Some physicians feel that the vertigo and loss of balance from use of SM is equally common and serious. It is difficult to choose between vestibular and auditory hazards, but the present opinion and restrictions almost eliminate the use of dihydrostreptomycin.

Para-aminosalicylate (PAS) is given as sodium, calcium and potassium salts, and as a resin. There is a choice of powder, tablets, enteric coated tablets, granules and intravenous forms. It produces some gastrointestinal or general toxicity in at least 25 per cent of patients; is the poorest tolerated of the major drugs; but, with planning and perseverance, all but about 5 per cent of patients can take it. It is given in daily doses of 12 gm., in three divided doses, with meals. A daily total of less than 8 or 9 gm. is probably not effective, although a single dose of 6 gm. once a day is being tried. Allergic reaction occurs in 2.5 per cent of the patients, but desensitization is possible in more than two-thirds of them.

The chief limiting factor in use of the drugs is not toxicity but loss of bacterial susceptibility (sensitivity) to one or more drugs. The resistance may occur in a few weeks or months if a drug is given alone, or if drugs are given irregularly. It tends to be permanent, and reduces or ends the antimicrobial effect of the drug. Therefore, no fewer than two drugs should be given for primary treatment and until it is certain that the sputum is negative for tubercle bacilli. PAS alone is not a powerful antibacterial drug but, when given in combination, it delays the emergence of resistance to SM and INH for many months; streptomycin and INH also have a mutually protective effect. The total toxic effect of a regimen depends on the drugs it contains; any combination with PAS is less well tolerated. The best clinical effect is obtained by combinations that include INH.

The secondary drugs are of special value in situations where susceptibility has been lost to one or more of the primary drugs, where primary drugs cannot be tolerated or where extra effect is needed for medical or surgical reasons. They include the following:

Pyrazinamide is clinically effective with INH. It is given in tablet form, 0.5 to 1.0 gm. two or three times a day, and is tolerated well except for occasional nausea, anorexia, etc. It may cause liver damage, usually reversible although occasionally serious or fatal, and should be used with great caution for any period over four months if there is a history of liver damage or alcoholism. Serial liver function tests should be obtained.

Viomycin is an effective antibiotic which is given intramuscularly, may be used as a substitute for streptomycin, may result in resistance and is a renal irritant and quite toxic for the auditory nerve when given daily. A less effective but safer dose is 1 to 2 gm. twice a week.

Cycloserine is an oral antibiotic with a moderate anti-tuberculous effect. It is given as a powder, in capsules, 250 mg. two or three times a day. It is quite often toxic in larger doses, producing irritation of the central nervous system, convulsions in 5 to 10 per cent of patients, and occasionally psychosis.

Kanamycin is an antibiotic, given orally or hypodermically, in a dose not to exceed 0.5 gm. twice a day. It is mildly effective, but can be very toxic, frequently causing progressive deafness.

Neomycin is a powerful antibiotic but its parenteral use is contraindicated because of the frequent occurrence of deafness.

Oxytetracycline is a broad-spectrum antibiotic with only a slight effect against the tubercle bacillus even in large doses (3 to 6 gm. daily). It is useful only as an adjunctive drug.

Thioamide drugs are currently being investigated.

The clinical effectiveness of the drugs used in tuberculosis depends on early administration, use of the best combination given constantly without interruption, a prolonged period of administration, substitution or addition of other drugs in case of need, removal or collapse of lesions when such help is required, and frequent reevaluation by x-ray and bacterial tests to show the progress of therapy.

Effects of Chemotherapy on Pathology

Most of the specific drugs are effective only against tubercle bacillus and have only an indirect effect upon the tissues and immune processes. The pathologic changes resulting from successful chemotherapy are best studied by serial x-ray observations, by examination of anatomical specimens and by animal experiment.

The drugs have a notable effect on the exudative and productive lesions, resolving them in a relatively short time. They indirectly prevent the further development of caseation necrosis and decrease the ultimate extent of fibrosis and emphysema. There is no evidence that the drugs have a significant direct effect on already formed necrotic areas except on ulcerated surfaces where a clearing occurs which the British call "caseolysis." All healing processes occur more quickly with chemotherapy, often in weeks or months.

The effect of chemotherapy on cavities is also notable. There may be a pronounced decrease of peri-cavitary reaction with a thinning of the cavity wall. The cavity may become smaller. "Blocking" of cavities and inspissation of their contents occur more often and rapidly, and fibrosis, hyalinization and calcium deposition may follow. The mural ulceration and granulation of the draining bronchi rapidly heal, and a re-epithelialization of the bronchocavitary junction occurs which sometimes extends into the cavity. Use of "the drugs" has resulted in an "open healing" of cavities, a condition which formerly was very rare.

The indications for chemotherapy with two or more drugs are as follows:

- All active tuberculous disease, both pulmonary and extrapulmonary.
- Disease presumed to be tuberculous but without bacterial evidence. A therapeutic trial should be used if other likely causes have been excluded, and especially if the tuberculin test is strongly positive.

There are several logical indications for INH alone:

- Continuation of treatment after tuberculosis has officially become "inactive" following use of multiple drugs. The duration should be a minimum of 12 months, and it may extend indefinitely.
- Late treatment of "quiescent" lesions after two or three years of a multiple-drug regimen.
- Primary treatment of minimal and moderately advanced non-cavernous lesions in which SM and PAS cannot be tolerated.
- Primary tuberculosis without a lesion evident by x-ray. This is "secondary chemoprophylaxis" for persons no longer positive to tuberculin tests. Therapy should be started as quickly as possible after diagnosis, and it has been known to largely prevent the lesions of hematogenous dissemination. This usage applies to adults as well as children. It also applies to infants under four years of age who are found to be reactive to tuberculin, since the duration of the infection is limited.
- Prevention of possible relapse in patients who have "inactive" disease but no recent chemotherapy. The course of treatment should be one to several years.
- Treatment of patients with a lung lesion which is presumed to be tuberculous, but with negative bacterial tests for tuberculosis. A strongly positive tuberculin test reaction emphasizes this indication. Improvement of such lesions during chemotherapy may be of help in differential diagnosis.
- Protection of patients who are receiving prolonged cortico-steroid therapy; patients with silicosis and a positive tuberculin test; patients with unstable diabetes and a positive tuberculin test, and patients with a gastric resection and tuberculin reaction.
- *Prevention of infection* in persons negative to tuberculin but in potential contact with "open" cases of tuberculosis ("primary chemoprevention") has just been proved effective in humans. The U. S. Public Health Service has released a preliminary report on the use of isoniazid among persons in contact with patients with recently diagnosed disease, inmates of mental hospitals and Alaskan natives.

Retreatment is a topic of increasing interest. An increasing number of patients require a second course of therapy because of incomplete healing, reactivation, carelessness, premature discontinuance of drugs or faulty use of the drugs. A fresh approach should be used, depending on the sensitivity pattern; a regimen of two or more drugs should be used; drugs of secondary value should be started; the drugs most effective in vitro should be selected; and any drug against which there is considerable resistance should be discontinued (except possibly INH).

Future prospects in chemotherapy should include a more extensive use of drugs as a result of better case-finding; a wider use of drugs owing to more precise knowledge of the effects; a better education of those who administer the drugs; improvement or discovery of new drugs; and a correlation of drugs with rest, exercise and surgical treatment.

REST AND EXERCISE

Rest has been called the keystone of treatment since Dettweiler modified the more vigorous methods of Brehmer and since Trudeau established his sanatorium in the United States. The original intent of rest was to "rest the body, to rest the chest, to rest the lungs, to rest the lesions." It attempted to decrease the volume and mobility of the lungs so that healing could more easily take place. There was evidence that this was often effective, even when there were no other methods to help.

Exercise was reduced to a minimum during the "rest cure" while the disease was active; it was later prescribed cautiously, like a strong medicine; and it was always aimed at not disturbing the chest until the healing was firm and the hazards of stress and strain were reduced.

Pathologically and bacteriologically the effect of the rest-exercise regimen was to allow resolution of the exudative element, scarring of the remainder and encapsulation of necrotic foci containing the bacilli. Many patients had complete healing of lesions; some became "good chronics" with cavitation and positive sputum ("open positive" lesions); some had relapses of the healing; and some died of progressive disease.

Since the rest cure was once effective by itself or with the help of collapse therapy, it should follow that it is still of value in conjunction with chemotherapy. It has become essential only for acute, seriously ill patients and in cases of hemoptysis. It is an adjunct when the drugs have given enough protection. Recent evidence suggests that intensive bed-rest is not needed for mild or moderately active lesions in patients receiving effective chemotherapy and with susceptible bacilli.

Strenuous exercise for prolonged periods should be avoided if healing is insecure and if the residual lesions are extensive. Certain therapists have been using exercise in suitable patients to "harden" the lesions during rehabilitation. This therapy has been limited to young males who do not have active disease. Many of those so treated have had lesions resected. There is no doubt that exercise tolerance is greater than has been thought, but age-groups and physical condition currently seen in most hospitals do not provide ideal indications for vigorous rehabilitation.

THORACIC OPERATIONS

All surgical procedures have had to be reevaluated in the light of chemotherapy. The number of operations has been reduced, since many are no longer necessary. The type of operation to be used depends on the lesion which is residual after adequate chemotherapy:

- *Thoracoplasty* is only occasionally used as a primary proedure. Nowadays many patients are allowed to continue with persistent cavitation that previously would have been treated by collapse. The operation is effective in reducing the volume of destroyed lung, but it still deforms the chest. A "secondary" thoracoplastic procedure is occasionally required to supplement some other form of collapse which has been complicated or has not been effective. Thoracoplasty may be the method of choice in some cavitary drug-resistant cases.

- *Extrapleural plombage* has generally been abandoned, due to complications and the success of resections. The exception is use of an extrapleural prosthesis, with placement of wax or lucite spheres in a "pocket" which is constructed after fairly large amounts of lung tissue have been resected (for example, a lobe plus a segment).

- *Extra - periosteal (subcostal) prosthesis* is sometimes used in place of thoracoplasty. The periosteum is peeled away from the ribs, the ribs being left in place; then wax, lucite spheres or plastic sponge is used to fill the space between the ribs and the collapsed fascial bundles. The operation is often less shocking than other thoracoplastic procedure, retains the chest wall support, avoids deformity and keeps the prosthesis away from tuberculous tissue.

- *Resection* is the surgical method most frequently used. A successful operation results in removal of the major disease process. The use of effective chemotherapy prevents the complications of resection of any type, but it also may eliminate the need for the resection. There is still a controversy as to the indications for resection, but there are several trends:

a. Resection of small, closed lesions is now rare, especially if the aggregate size is less than 4 cm.

b. Resection of "open negative" lesions is less frequent, especially if some other ailment or the patient's age contraindicates, or if the lesions are bilateral.

c. Resection of residual lesions is indicated when the bronchial secretions still contain bacilli. This is especially so if the bacilli are resistant to one or more drugs. (The complications in these groups are naturally higher.)

d. The use of segmental or smaller resections is decreasing, due to complications, in favor of lobectomy.

e. Morbidity and mortality after operation depend on many factors, including type of disease, extent of the operation, condition of the contralateral lung, condition of the bronchial walls, the availability of useful drugs, the skill of the surgeon, the anesthesia and the postoperative care. Indications for surgical treatment will probably not change much more until a bactericidal drug is available.

ADJUNCTIVE THERAPY

All other treatment methods are adjunctive to chemotherapy.

- *Diet* now means a balanced amount of food substances, with adequate calories, sufficient protein and a supplement of vitamins. There is evidence that vitamins A and C are particularly necessary for healing. Foods which disturb the intestinal tract and decrease tolerance to PAS should not be eaten.

- *Climate* is useful only as it affects a comfortable existence. It has no demonstrable good or bad effects on tuberculosis.

- *Heliotherapy* is not required for healing, and Vitamin D is available in food. Sun-bathing should be avoided if it results in sunburn, but reasonable amounts are safe and legitimate.

- *Symptomatic treatment* may temporarily be needed for cough, pain, etc. Most symptoms disappear or considerably decrease with specific drug therapy.

- *Psychotherapy* may be required for several reasons: The patient may need to be convinced that therapy is necessary; he may require education and assurance about tuberculosis. The patient may also have a tension condition which requires sedative or tranquilizer drugs. Healing and relapses may be related to the psychic status. The mechanism by which this occurs is not yet certain, but it may be mediated by hormones, and the levels of hormones may be measured.

- *Adrenal corticosteroids* are hazardous to use if tuberculosis is present but not recognized, or is present but not under control by chemotherapy, or present but with bacilli not susceptible to the drugs. The modern steroids are now being found *helpful* in:

a. Acute forms of tuberculosis (pneumonic, miliary, meningeal, toxic).

b. Allergy to essential anti-tuberculosis drugs.

c. Tuberculosis associated with adrenal insufficiency.

d. Tuberculosis of serous membranes (quicker absorption, less residues).

e. Tuberculosis associated with other conditions requiring steroid therapy (collagen diseases, sarcoidosis, and arthritis).

All of these conditions must be under adequate and effective treatment with specific anti-tuberculosis drugs during the administration of corticosteroid drugs.

- *Pneumotherapy.* Pneumothorax (intrapleural) and pneumoperitoneum are rarely used since the advent of chemotherapy. They should not be forgotten, however, since an occasional lesion might benefit from temporary use of them and because the complications of pneumothorax have been much reduced by the chemotherapy. They could also be useful in cases in which chemotherapy fails. Pneumoperitoneum is sometimes used after resection to raise the diaphragm and allow the expanding lung more readily to fill the pleural space.

REHABILITATION

The final step in treatment of tuberculosis is largely one of rehabilitation. The process begins earlier in treatment, however, when rehabilitation walks side by side with other methods of therapy.

General Principles

Rehabilitation is the restoration of the handicapped to the fullest possible degree of physical, mental, and social usefulness. The term *rehabilitation* is comprehensively used to include the vocational, economic, educational, spiritual, recreational and other elements of living. The need for rehabilitation in tuberculous patients is especially great because control of the disease often depends upon the patient's personality and activities. Full recovery is greatly influenced by both physical and psychosocial factors.

A short-term hospital traditionally deals with the physical aspects of disease, whereas a long-term hospital is concerned also with the emotional features. It becomes essential that every hospital assess its needs for rehabilitation with the realization that it is as important to treat the patient as it is to treat his disease. The same principles apply to patients being treated at home.

The degree of rehabilitation to be initiated in a hospital depends upon the needs of the patients, the attitude of the hospital staff and the facilities available in the hospital and community. One or more phases of rehabilitation should be initiated immediately after the physical appraisal of the patient has been made.

There has been a decided broadening of the scope of rehabilitation since the advent of chemotherapy, and more arduous physical activities than were permitted in former days may now be allowed. Indeed, younger patients with good therapeutic results may return to manual labor or to the military services.

Vocational rehabilitation, or the training of the handicapped in an occupation suitable to health and aptitude. is still needed by many patients. The indications for such rehabilitation may be considered generally as follows:

Type of disease—extensive residual. the patient not likely to stand much physical activity: considerable loss of lung tissue; complications such as emphysema, cor pulmonale or disturbing symptoms; too great a loss of muscle power to maintain previous employment.

Type of person—motivated patients anxious to improve on previous status: males over 40 years, especially if single; no previous job; no special job skills. personality disorders; associated psychosis; little or no education; alcoholism, chronic jail residence; recalcitrancy.

Vocational rehabilitation is not indicated, of course, if either the recovery is so good that the patient can return to any type of physical activity in an old or new job, or has so much disability from tuberculosis or its complications that gainful employment cannot reasonably be expected.

The following listing of stages in vocational rehabilitation is not necessary sequential, since many of these steps are simultaneous. The program planning may even start during the active stage of the disease. There should be frequent conferences of the rehabilitation team to assure a coordinated and steady progress.

1. Evaluation of the medical state; character of the disease, prognosis; expected recovery; the physical activity eventually permissible; and the vocational goal and medical limitations.
2. Emotional condition and its relationship to the vocational goal. Proper motivation of the patient is a basic requirement.
3. Vocational testing and counseling.
4. Vocational activities—to include graded activity, educational courses, vocational exploration through occupational and manual arts therapies, and actual trial at work.
5. Training, in the hospital, school and shop.
6. Job placement. The number of hours the patient may work per day, the rate of increase and the ultimate work capacity under normal or limited conditions should be known at the time of discharge.

Maximum Self-sufficiency. There is an ever growing need for rehabilitation geared to independent living in both the general and tuberculous population. The indications for this type of training may be present:

- In tuberculous patients who are being treated in the hospital or at home.
- In chronic "active" tuberculous patients.
- In cases with such disability as to preclude gainful occupation.
- In patients who need vocational rehabilitation but who refuse it.
- In patients over 60 years of age, pensioners and the retired.

All methods described should be used on an individual as well as on a group basis, and particular emphasis should be given to cultural and recreational activities. Some types of vocational projects, with or without remuneration. may also be stimulating and morale-building. No program should be rigid and inflexible. Many patients over 60 years of age are capable of vocational rehabilitation; some patients with chronic disease and with sputum positive for tubercle bacilli may earn a livelihood at home; and many patients who at first reject vocational aid may later be motivated sufficiently to return to social usefulness.

The Professional Services. Rehabilitation involves the utilization of many skills. The extent of rehabilitation to be attempted in a hospital must depend upon the size of the hospital, the need for such a program, the hospital budget, and the attitude of the administration. The program may include the following specialists: a vocational counselor, a clinical psychologist, a social worker, chaplain, educator, recreation director, occupational and manual arts therapist, in addition to the medical and nursing staffs.

The program can be more complete if there is a close liaison with interested agencies such as a state office of vocational rehabilitation, the National Tuberculosis Association, the Veterans Administration, welfare agencies, and private industry. Special hospital industries and sheltered workshops may be useful in large centers, and for special types of patients.

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Congenital Heart Disease

Changing Concepts in the Surgical Treatment

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• Probably the most important continuing advance in the treatment of congenital heart disease is the ever-diminishing risk of operations on the open heart. The uncomplicated septal defect or valvular stenosis is now corrected under direct vision with essentially the same risk as that which attends the routine operation for patent ductus arteriosus. Perfusion systems, and corrective heart operations, are now available for any patient who weighs 10 kilograms or more; palliative operations are often prescribed for critically ill patients weighing less than 10 kilograms.

With respect to the future, successful removal and replantation of the heart in dogs opens the door for imaginative approaches to many states now considered inoperable. Still more inspiring is the realization that cardiac homotransplantation is surgically feasible and immunologically possible, if specific transplantation antigens can be isolated.

TECHNICAL ADVANCES in surgical operations on the heart are developing so rapidly that the list of inoperable congenital heart diseases is constantly diminishing. Yet, much work remains to be done and many areas are essentially unexplored.

The specialty of cardiac surgery was born in 1938 when Gross and Hubbard performed the first successful operation for patent ductus arteriosus.[2] Amazing strides have come since that eventful occasion and the future holds hope for even greater ones. Discussion of them can proceed along anatomic lines, touching on juxtacardiac anomalies first, continuing with valvular and septal defects and closing with a glimpse into the fascinating world of experimental cardiac surgery.

Patent Ductus Arteriosus

Perhaps the purest of all surgical procedures is division of the uncomplicated patent ductus. The same anatomic defect in the presence of increased pulmonary vascular resistance and pulmonary hypertension is a different matter entirely. In fact in some cases of bi-directional shunting operation is not feasible, and ablation of the ductus is fatal when the flow is predominantly right-to-left. Lower extremity cyanosis of course is the cardinal physical finding of the latter condition. While simple patent ductus can be severed with little difficulty, extra measures are worthwhile in cases in which there are high pulmonary artery pressures. Moderate hypothermia to permit cross-clamping of the aorta above and below the ductal ostium is useful. If the pulmonary artery pressure increases during a trial period of ductal obstruction, the prognosis attending division of the ductus is ominous. If the pulmonary artery pressure falls, one may proceed with the operation confident that the pulmonary arteriolar resistance is not fixed and that the high pressure resulted primarily from flow rather than from arteriolar occlusions.

Operative disasters are infrequent if the high pressure ductus is clamped in such a way as to avoid the thin-walled pulmonary artery. With the body temperature at 32° C., the aorta is occluded above and below the ductus, and the ductus is clamped with a single instrument. The aortic and ductus suture lines lie at right angles to each other.

We believe that patent ductus always should be divided rather than ligated. We prefer to do the operation in the pre-school age group but do not hesitate to carry it out during infancy if the situation demands. In infants with life-endangering but correctable cardiac anomalies, the techniques of anesthesia may be more important than the surgical method. There are no acceptable data on mortality from operations for uncomplicated patent ductus arteriosus.

Occasionally aortic septal defect may closely mimic patent ductus. Cineaortography then is very helpful in the diagnosis. In perhaps 90 per cent of cases, patent ductus may be diagnosed without special methods. Catheterization is essential in atypical ductus or if the patient has pulmonary hypertension.

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Supported in part by Research Grant H-4658 of the National Heart Institute.

Presented as Part of a Panel before a Joint Meeting with the Sections on Internal Medicine and General Practice and Pediatrics, at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

Coarctation of the Aorta

Resection of the aorta for coarctation with end-to-end anastomosis was another early operation for congenital diseases of the heart and great vessels. The pathologic physiology is more complicated in this condition than in patent ductus. Associated congenital heart disease is often noted in patients with coarctation of the aorta. So frequent is this association that we look for another cardiac lesion in any infant in trouble from aortic coarctation.

In previous years it was customary to defer operation until the patient was between 10 and 20 years of age. This policy is certainly still acceptable, but earlier intervention is gaining sanction. The fear that the aorta at the site of anastomosis, if carried out in infancy, would not grow sufficiently to accommodate the patient later is now largely overcome by experience. The reduction in mortality which can be achieved by earlier operation is significant. Grafts should be used only rarely.

The syndrome of abdominal pain after resection of a coarcted segment of aorta is well documented, but the cause remains obscure. The drastic change in circulatory dynamics postoperatively no doubt accounts for the clinical manifestations.

Vascular Rings

Little has been added lately to the surgical knowledge of vascular ring anomalies. Angiographic methods help greatly in planning the operative procedure. Neglected states of esophageal compression, usually by a ligamentum arteriosum, were recently identified in a number of adults and treatment was carried out. After the diagnosis is made, age should not preclude operative intervention if symptoms are present.

We treated an infant a year ago who had a patent ductus and coarctation of the aorta with a right subclavian artery taking off below the aortic stricture. The pulse at the right wrist, weak before operation, became easily palpable after division of the anomalous subclavian artery. Apparently the flow of blood preoperatively was from the right arm into the descending thoracic aorta.

Palliative Operations

Many of the available palliative procedures (as distinguished from surgical treatment of the open heart) are used in infants too small for corrective operations.

Transposition of the great vessels. While the Baffes modification of Varco's original operation still is used in some quarters.[1] for infants with transposition of the great vessels, we have more confidence in the creation of an atrial septal defect. Any procedure that promotes greater mixing between the two circulatory streams should have merit. We know of one patient 18 years old who had Blalock's anastomosis at age 4 and is alive and reasonably well with transposition of the great vessels. She also has pulmonic stenosis.

Tetralogy of Fallot and pulmonic atresia. A Blalock or Potts anastomosis may be useful in an infant weighing less than 10 kilograms, who has critically deficient pulmonary blood flow. While smaller oxygenators are under development to permit perfusion of tiny infants, we have successfully perfused and treated several 10-kilogram patients with a variety of lesions. It seems clear that the use of hypothermia alone for pulmonic stenosis is outmoded in view of improvements in techniques for extracorporeal circulation in infants.

Ventricular septal defects in infants. The predictably high mortality in infants less than one year old submitted to open-heart operations for ventricular septal defects led us to join other proponents of the Muller-Dammann pulmonary artery banding procedure. The idea of converting these cases into cases of acyanotic tetralogy has been substantiated by clinical trial despite the fact that it was originally conceived because of slow development of perfusion systems.

Open-Heart Operations

Probably the most notable advance in the general area of open-heart surgery is the continuing reduction in operative mortality and the more aggressive surgical attitude permitted thereby. Defects in the cardiac septa are closed routinely without fear of bleeding and embolism attributable in previous years to inexperience and untried equipment. The artificial heart-lung machine now presents no more additional risk than that associated with the general anesthetic. Congenital lesions of the valves of the heart are also being treated with increasing success and diminishing risk.

Elective cardiac arrest, so essential to operation for correction of a variety of cardiac anomalies, has become a relatively innocuous procedure. Apparently, heart muscle is no more susceptible to injury from oxygen deprivation than any other muscle in the body; in fact it may be more resistant to anoxic insult than ordinary skeletal muscle.

Valves

While the first operations for pulmonic valvular stenosis were done blindly, direct vision methods permitted by general hypothermia soon were adopted.[9] At present open operations on the pulmonic valve should probably be carried out with the aid of extracorporeal circulation because of the incidence of masked ventricular septal defects. The pulmonic valve is exposed by a supravalvular incision in the pulmonary artery, and elective cardiac arrest is not used. No incision is made into the thick right ventricle unless a ventricular septal defect is discovered by the appearance of bright red blood in the pulmonary arteriotomy.

The history of operative approaches to the aortic valve closely parallels that previously stated for the pulmonic valve. Blind operations which were successful, however, for the pulmonic valve proved to be not only unsuccessful but also often fatal when used on the aortic valve. The reason of course is that aortic insufficiency was brought about by the efforts to open the aortic valvular stenosis without seeing the field. Hypothermia permitted some successful operations on congenital aortic valvular stenosis, but the advent of safe extracorporeal circulation has paved the way for the current choice of operative methods. Elective cardiac arrest is utilized along with a supravalvular aortic incision. The consecutive experience in aortic valve lesions of the congenital variety at the Palo Alto-Stanford Hospital is shown in Table 1. With respect to congenital aortic valvular stenosis, it must be emphasized that great care should be taken not to make the valve insufficient. Very frequently these are bicuspid valves with only a remnant of a third commissure. Under these conditions it is clearly important not to attempt developing a commissure which may be only a raphe.

We recently operated upon a 10-year-old boy with familial subvalvular hypertrophic obstruction of the left ventricular outlet. The aortic valve had been pinched out of the heart by the hypertrophic left ventricle, and excellent exposure of the entire ventricular septum could be obtained through an aortotomy. With sharp dissection a valley was developed anteriorly, extending from immediately below the normal valve to the left ventricular apex. The immediate operative result was gratifying. We have dealt with only one case of supravalvular aortic stenosis, and this was relieved by cutting through the tight band into the noncoronary bearing sinus. A diamond-shaped patch of Teflon was sutured in such a way as to increase the diameter of the aorta. The kind of elective cardiac arrest that we favor is that provided by anoxia and local hypothermia.[8] Coronary perfusion is not utilized in most cases of congenital aortic stenosis.

Congenital disease of the mitral valve is often associated with other defects such as coarctation of the aorta and patent ductus. Stenosis may be the result of severe valvular derangement, and even direct vision procedures may be unrewarding. For the patient with valvular insufficiency, annuloplasty is helpful. We utilize peripheral venous cannulation for blood return to the oxygenator and left thoracotomy. The heart is not arrested. Sutures must be placed in the annulus in such a way as to rotate the available valve tissue into the mitral orifice. With the left side up, air embolism is avoided and exposure of the valve is excellent.[3]

TABLE 1.—*Data on Correction of Congenital Aortic Stenosis During Cardiopulmonary Bypass**

	Number of Cases
Subvalvular†	6
Valvular	5
Supravalvular	1
	12

*There were no deaths.

†Includes one patient with familial hypertrophy of the left ventricular outlet.

Septa

Hypothermia provided a method for the first successful open-heart operation, which was closure of an atrial septal defect,[5] but extracorporeal circulation now is generally favored for any approach to the cardiac septa. At the Palo Alto-Stanford Hospital there has been only one death in 75 operations for defects of the atrial or ventricular septum. One word of caution in the surgical treatment of atrial septal defects would apply to the prevention of air embolism. All air must be removed from the left side of the heart before terminating the extracorporeal source of circulation. Filling the left atrium with saline solution immediately before placing the last suture in the atrial septal defect and simple aspiration of the left ventricle before closing the right atriotomy, minimize the chance for air embolism. In older patients with large atrial septal defects use of a patch of synthetic plastic material may be necessary to close the defect without tension.

Elective cardiac arrest is used in most cases of ventricular septal defect. However, in patients with very small shunts elective cardiac arrest is not always necessary. Even when the aorta is not clamped a left atrial catheter is used to keep the left side of the heart free of blood that drains from the bronchial vessels. All edges of the defect are more readily visualized if the field is dry. Primary suture of the defect and reinforcement with the plastic prosthesis is the usual method of closure. There has been no case of sustained complete heart block in a patient with a ventricular septal defect.

Endocardial Cushion Anomalies

Most defects in this category entail multiple involvement of septa and valves. Atrial septal defects of the ostium primum type may occur without deformity of the mitral valve, but this is rare. More frequently the anomaly comprises a low atrial septal defect, a cleft in the aortic leaflet of the mitral valve and a small depression in the ventricular septal ridge with a cleft tricuspid valve.

The anatomic problem may be so severe that surgical correction is a great challenge, or the task may be exceedingly easy. As with operations for correction of ventricular septal defects, the prognosis may well depend on the state of the pulmonary vascular bed. Heart block is largely prevented by placing sutures in the ventricular septal ridge with the heart beating. Any interruption of conduction is immediately identified. We almost always use prosthetic material for closure of the defect.

Two points in diagnosis are worth emphasizing: (1) Any infant or child in trouble on the basis of what appears to be an atrial septal defect probably has the endocardial cushion anomaly; (2) the presence of left axis deviation on the electrocardiogram should arouse suspicion of this cardiac lesion.

Tetralogy of Fallot

Perhaps the most interesting of all congenital heart diseases is Fallot's tetralogy or pentalogy. Lillehei showed that this anatomic complex was totally correctable if not curable.[6] We use anoxic cardiac arrest with local hypothermia and almost uniformly enlarge the right ventricular outflow tract with a Teflon gusset. Primary suture of the defect is reenforced with a plastic patch sutured circumferentially to the right ventricular endocardium. Anomalous muscle bundles which tend to separate the infundibular chamber from the right atrium must be recognized and excised. The experience with such cases at the Palo Alto-Stanford Hospital is shown in Table 2.

TABLE 2.—*Total Correction of Tetralogy of Fallot (Consecutive Procedures)*

Number of cases	16
Age range	19 months to 44 years
Right ventricle outflow gusset	14
Previous shunt	3*
Complications	1 heart block (asymptomatic)
Deaths	None

*Two patients with end-to-end Blalock anastomosis.

Experimental Operations on the Heart

In the treatment of congenital heart disease the use of functioning prosthetic devices may have little ultimate application. In light of the continuing mortality associated with implanting prosthetic aortic and mitral valves in patients with acquired disease, it seems unlikely that such devices will be widely used in young persons. It is a surgical defeat certainly when existing tissue cannot be arranged in a more satisfactory functional state than that which is provided by any prosthetic device. The natural events of wound-healing are almost as unfriendly to prosthesis as the immunologic reaction is to homografts.

After some success with the study of whole heart homotransplants, we turned to the interesting problem of excision and isotopic replacement of the cardiac autograft. Improvements in apparatus for extracorporeal circulation and elucidation of the fact that the heart can recover after long periods of oxygen lack permit a glimpse into the future when a heart may actually be removed from the body, surgically corrected, and then replaced. Experiments have been completed which suggest that no untoward effects result from total separation of the heart from its nerve supply.[4] Obviously, many of the complex congenital cardiac diseases now inoperable could become correctable through new, imaginative approaches.

Finally, the elusive goal of cardiac homotransplantation has been achieved in experimental animals with survival as long as three weeks.[7] Homograft rejection, the *bete noir* of long-term homotransplantation, is under study in these animal preparations.

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Management of Peripheral Arterial Occlusive Disease

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• The proper use of medical therapeutic agents in the management of peripheral arterial occlusive disease must be based upon a thorough understanding of the factors controlling vasomotor tone and vasospasm, mechanisms regulating blood flow in skin and muscle, factors favoring nutritional and shunt flow, effects of the diversion of blood from one vascular bed to another, muscle contraction as a factor which may limit the blood flow to a part, epinephrine sensitivity after sympathectomy, and the effects of vasodilator drugs on the local and total circulations.

There are six major classes of therapy for peripheral arteriosclerosis: General medical care, administration of vasodilator drugs and administration of anticoagulants, sympathectomy, direct vascular operation and amputation. In many cases the most successful treatment is a combination of medical and surgical therapy.

CERTAIN PATHOLOGIC CONDITIONS of the blood vessels in aged persons were described as early as 1513 by Leonardo da Vinci. Following this, physiologic studies prompted by the work of William Harvey in 1688 have expanded our knowledge of the normal circulation. In recent years numerous organic and functional peripheral arterial occlusive diseases have been studied and the studies have served as a basis for modern therapy. It is the purpose of this paper to discuss the medical therapy of the obliterative arterial diseases, placing special emphasis on arteriosclerosis obliterans because of the high incidence of this disease.

PERIPHERAL BLOOD VESSELS IN HEALTH AND DISEASE

Vasomotor tone and vasospasm. The peripheral blood vessels normally are in a state of partial vasoconstriction which is called vasomotor tone. This, at any moment, is the net result of numerous vasodilating and vasoconstricting forces which are of nervous, hormonal, chemical, metabolic, physical and environmental origin. The tone may be modified by anxiety, sympathomimetic or sympatholytic drugs such as amphetamine or mecamylamine; by the products of ischemia of muscle (dilators) or kidney (constrictors), by exercise, by pituitrin, thyroid, epinephrine or nor-epinephrine, by heat and cold and by disease. Vasomotor tone should be differentiated from vasospasm which is a pathologic condition characterized by episodic constriction of vessels resulting in ischemia as seen typically with Raynaud's disease.

Vasomotion in muscle and skin. Anatomic differences between muscle and skin vessels may account for differences in their behavior. Skeletal calf muscle contains about ten times more capillaries and fewer sympathetic nerve fibers than the skin of the toes, and the latter has a relative abundance of arteriovenous shunts. The muscle vessels dilate readily from metabolites from exercise, local heat, ischemia, circulating epinephrine and epinephrine-like drugs such as nylidrin (Arlidin®); while skin vessels are influenced by sympathectomy and sympathetic blocking agents and certain drugs such as tolazoline (Priscoline®).

Nutritional and shunt flow. The interchange of nutrients between capillary and tissues is a most important function of the circulatory system. The skin of the acral portions of the body is richly supplied with arteriovenous shunts which, when closed completely, direct the blood through the nutritional vessels. When the shunts are wide open, they may detour the major portion of the blood through the shunts, thereby inhibiting the nutritional circulation.

Diversion phenomenona. Normally, at rest, all the circulating blood (about 5 liters per minute) passes through the right ventricle, lungs, left ventricle and aorta. Only a portion, however, flows through other vascular beds such as the splanchnic, renal, voluntary muscular, cerebral, skin and coronary circulations. Only 16 per cent flows through resting voluntary muscle and 5 per cent flows through the skin. With arterial disease, distribution of blood flow is altered and blood is often diverted away from the diseased areas to healthier vascular beds. The diversion theory postulates that distal to an obstruction which limits the inflow of blood to a part, an increase in circulation (local decrease in peripheral resistance) in one vascular bed will be associated with a decrease in circulation in another vascular

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Presented as part of a Panel on the Management of Occlusive Arterial Disease at the First General Meeting at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

From the University of Southern California School of Medicine and the Wiley Winsor Memorial Heart Research Foundation, Inc.

bed[1] (Figure 1). For example, in the presence of a popliteal artery obstruction which limits the amount of blood available to the calf and foot, there may be enough blood to supply the skin and the muscle at rest, but with exercise vasodilatation occurs in calf muscle which lowers the vascular resistance in this area. Consequently blood is diverted away from the skin of the foot to supply the exercising calf muscle. Clinically this is observed as blanching of the skin after exercise in patients with obstructive arterial disease.

Muscle contraction and blood flow. Blood flow often is dependent upon the relationship between intra and extravascular (muscle) pressures. In the presence of disease such as Buerger's disease which lowers the intra-arterial pressure, contraction of the muscles around an artery or other vessel often is sufficient to interfere with flow. This may occur in such occupations as truck driving, in which a steering wheel is held firmly in the hands. Here, the forearm muscles contract and produce ischemia of the hands or digits.

Epinephrine sensitivity. This develops about a month after sympathectomy, especially if the operation was postganglionic and in the upper extremity. It is for this reason that adrenergic blocking agents such as azapetine (Ilidar®) are useful after operation.

Vasodilators and the total circulation. Local vasodilators often increase the circulation through dilated vessels while decreasing the circulation elsewhere. Where this occurs locally, the cardiac output and blood pressure remain constant (Figure 2). Generalized vasodilatation, in the sense that there are more dilated vessels than constricted vessels in the body, requires an increased cardiac output to maintain adequate circulation in all areas and a constant blood pressure (Figure 3). Tachycardia is seen commonly when ganglionic blocking agents are administered.

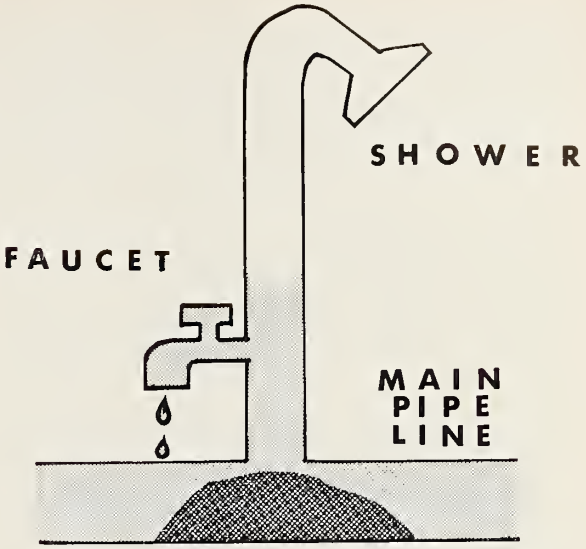

Figure 1.—The diversion phenomenon can be demonstrated by comparing blood flow in a vessel to the flow of water in a pipe line supplying a shower and a faucet. When the main pipe line is open, there is sufficient water for the shower and the faucet, but with a partial obstruction to the main pipe line the head of pressure is only sufficient to supply the faucet.

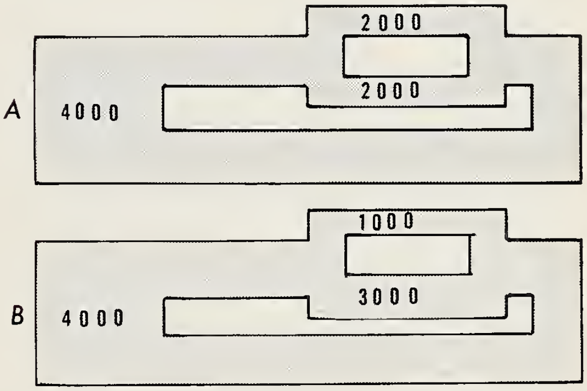

Figure 2.—Local vasodilatation (cardiac output and blood pressure constant). (A) Before vasodilatation the cardiac output is 4,000 cc. per minute and the blood flow in each of the two vascular beds is 2,000 cc. (B) After local vasodilatation in one vascular bed the flow increases in one area at the expense of another but the cardiac output remains constant.

THERAPY OF PERIPHERAL ARTERIOSCLEROSIS OBLITERANS

There are five major classes of therapy for peripheral arteriosclerosis obliterans. These are general medical care and administration of vasodilators, use of anticoagulants, sympathectomy, direct vascular operation and amputation.

General Medical Care

General instructions. Walking or exercising to the point of pain is permissible. The stride should be shortened by 25 per cent to slow the walking rate and to extend the walking distance. This is advised on the basis of experiments which show that exercise of the calf muscle in patients with arterial disease results in a diversion of blood away from the foot to the exercising muscle. Thus, to continue walking during pain may produce damage to the skin of the foot and toes. It has been suggested that walking, even in the presence of pain, promotes the development of collateral circulation, but the evidence for this proposition is meager.

The head of the bed may be elevated four inches, and the patient should be warned against the foot-up position. It should be stressed that the feet should be below heart level for arterial disease and above heart level for venous disease. The foot-down position allows gravitational forces to favor blood flow

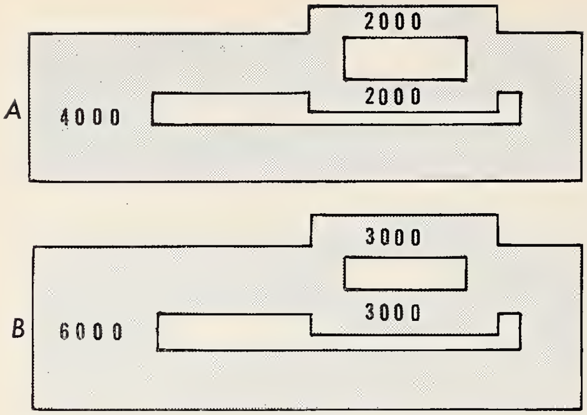

Figure 3.—Generalized vasodilatation; an increase in cardiac output is necessary to maintain blood pressure. (A) Before vasodilatation the cardiac output is 4,000 cc. per minute and the blood flow in each of two vascular beds is 2,000 cc. (B) Generalized vasodilatation results in an increased cardiac output in order to maintain the level of the blood pressure.

into the foot through the arterial channels. Blood is returned from the dependent limb to the heart through the venous channels against gravity with the aid of venous valves, muscle movement and respiration. Buerger's exercises are prescribed when severe ischemia is present. They have been modified as follows: The patient sits for 15 minutes on the side of the bed, wearing warm stockings and pajamas to prevent cooling, his feet supported by a pillow on the floor. The pillow should be high enough so that the bed does not compress the vessels at the back of the knees. After about 15 minutes, or if swelling develops, the patient assumes the horizontal position to favor venous dumping. After 15 minutes the procedure is repeated. The foot-up position originally described by Buerger is eliminated because it produces ischemia of the tissues. Moderate indirect body heating in the form of warm clothing is beneficial while excessive body heating is avoided as it may produce a diversion of blood away from the rigid, diseased vessels to the more elastic vessels which are capable of dilating. Nicotine should be stopped or reduced in most cases, particularly in patients with Buerger's disease and in those with atrophy or ulceration of the skin. Nicotine unquestionably limits the blood flow through the skin of the limbs in many normal persons as well as in those with peripheral arterial disease. It is of interest to note that the flow in a limb following sympathectomy does not decrease after smoking, as one site of nicotine action is the sympathetic ganglion. Direct heat and prolonged soaks generally are inadvisable. However, short soaks may be necessary to remove debris and crusts and to promote drainage. Appropriate diets should be given if the blood cholesterol or triglycerides are high or if diabetes is present.

TABLE 1.—*Sites of Action of Various Vasodilating Drugs*

Site	Agent
Cortex	Barbiturates
Hypothalamus	Dihydro ergot alkaloids (Hydergine®)
Sympathetic ganglia	Ganglionic blocking agents: Tetraethylammonium chloride (Etamon®) Camphorsulfonate (Arfonad®) Mecamylamine (Inversine®) Trimethidinium Pentolinium (Ansolysen®) Hexamethonium Chlorisondamine (Ecolid®)
Myoneural junction	Adrenergic blocking agents: Azapetine (Ilidar®) Phenoxybenzamine (Dibenzyline®) Dihydro ergot alkaloids (Hydergine®) Tolazoline (Priscoline®) Phentolamine (Regitine®)
Smooth muscle of vessels	Direct acting drugs: B-pyridylcarbinol (Roniacol®) Nicotinic acid Cyclandelate (Cyclospasmol®) Nylidrin (Arlidin®) Isoxsuprine (Vasodilan®)

Vasodilators for ischemia of the skin. Skin dilators such as azapetine (Ilidar®) and tolazoline (Priscoline®) alone or in combination are advisable. The average starting dose of Ilidar® is 25 mg. four times a day. Priscoline® in the 80 mg. long-acting form may be administered every 12 hours. Alcohol in the form of whiskey, 45 cc. orally 2 or 3 times a day, is of value if there are no contraindications such as cirrhosis of the liver, gastritis, peptic ulcer, alcoholism or individual idiosyncrasy. Alcohol is an effective skin dilator with a direct action on the blood vessel walls. It also has a central site of action, which favors vasodilatation.

The available vasodilating agents have sites of action which are shown in Table 1. When vasodilating therapy is employed, it is well to use agents in combination, for no one drug is sufficiently effective alone. Often muscle ischemia (intermittent claudication) and atrophy or ulceration of the skin occur simultaneously. Here, the skin dilators and muscle dilators should be used in combination. For example, alcohol, Ilidar® and Priscoline® may be used together to dilate the vessels of the skin, and Arlidin® may be given to dilate muscle vessels and increase cardiac output. The more useful vasodilating agents often are those which have adrenergic blocking properties, for example Ilidar®, Dibenamine® and Priscoline®, as they block some but not all of the physiologic effects of circulating epinephrine.

Intra-arterial therapy may be employed in patients with an acute embolus or thrombosis. The agents are injected directly into an appropriate vessel, such as the femoral artery. In the presence of poor circulation the drug is diffused slowly into the tissues. Priscoline®, Hydergine®, Arlidin® and Vasodilan® have been used in this way. Priscoline® and Hydergine® have their greatest effect on increasing the skin circulation while Arlidin® and Vasodilan® increase muscle circulation primarily. In some cases a diversion of blood is manifest by a significant increase in muscle circulation at the expense of skin circulation and there appears a decrease in temperature and blanching of the skin of the toes for as long as a half-hour after the intra-arterial injection of a muscle dilating drug.

Physical therapeutic procedures. Use of an oscillating bed along with a vasodilator, such as alcohol, helps increase skin circulation. The bed should oscillate from horizontal to foot-down position, thereby favoring gravitational inflow through the arteries during the foot-down position and venous dumping during the horizontal position. The bed prevents edema which might occur if the feet remained dependent for long periods. Also, intermittent venous dumping by periodic compression of the limbs with the feet in a dependent position may be helpful, and is a new form of therapy which is theoretically sound and is being investigated. Diathermy, ultrasound and the Pavex boot are not generally helpful.

Anticoagulants

Long term anticoagulant therapy probably is indicated after surgical operation and in patients with disease of the small vessels and in those with advanced, diffuse vascular disease where surgical treatment is not practical. The value of anticoagulants in peripheral vascular disease has not been studied as completely as in coronary artery disease, nor has it been completely evaluated statistically. However, the layering of clotted blood that is seen in aneurysms and in thrombosed peripheral vessels strongly suggests that periodic coagulation of blood is often a factor in limiting the blood flow to the periphery. It would seem that anticoagulants should be used while further investigations are being made.

Sympathectomy

Sympathectomy is indicated early in the course of certain peripheral arterial diseases if sympathetic vasoconstrictive tone is high, rather than late in the course of the disease when organic changes predominate. Sympathectomy is performed when the cause of high vasomotor tone is impulses traveling over the sympathetic nervous system and not when the cause is constriction due to other causes. The role of the sympathetic nervous system is assessed readily in the lower extremities by a posterior tibial nerve block and in the upper extremities by a brachial plexus exit block which is performed by injecting 2 per cent procaine solution near the origin of the biceps muscle or by a cervical sympathetic block. Generally, sympathectomy for the upper extremities is relatively unsatisfactory because of epinephrine sensitivity which develops in a matter of a few months and because of what appears to be regrowth of sympathetic nerves after a period of about two years. Also, often Raynaud's phenomenon proves ultimately to be a manifestation of a collagen disease such as disseminated lupus which in some cases can be diagnosed only by prolonged study. In such situations sympathectomy is of only transient benefit. Sympathectomy of the lower extremities is of greater value in properly selected cases because epinephrine sensitivity does not develop as readily. Sympathectomy is indicated mainly to improve the circulation of the skin of the lower third of the legs and of the feet. Sympathectomy does not increase muscle circulation significantly, nor is it used to influence intermittent claudication. Ulcers of the toes, if small, may heal after sympathectomy. This procedure is of value in patients with Buerger's disease involving the lower extremities and is frequently performed for this condition. It is employed also for causalgia of the lower and sometimes of the upper extremities. It is seldom performed in patients with diabetes because of the associated neuropathic condition which often produces autosympathectomy. Sympathectomy should not be performed as a last resort or because all other measures have failed. A positive clinical indication that sympathectomy may be helpful is the conversion of a cold, wet, white limb with constricted veins to one that is pink and warm with dilated veins when a posterior nerve block is performed.

Direct Arterial Operations

From the internist's point of view it appears that thromboendarterectomy for treating arteriosclerosis obliterans is a satisfactory procedure when employed proximal to the superficial femoral artery. Replacement or by-pass grafts are usually successful for treatment of abdominal aneurysms. Generally, iliac artery replacement or thromboendarterectomy in these locations is successful, with little tendency toward recurrence of thrombosis. Unplugging of the deep femoral artery is a useful procedure which can restore sufficient blood to the limb, even though a superficial femoral artery be obstructed, to cause healing of ischemic ulceration of a foot. Thromboendarterectomy of the common femoral artery may be successful. In the case of thromboendarterectomy or a by-pass graft of the superficial femoral artery at the adductor canal or at the popliteal artery and distally, there is a greater tendency toward recurrence of thrombosis and there is a reasonable chance that a year after either a graft or thromboendarterectomy the vessel will not be patent. Homografts have a tendency to dilate and for this reason prosthetic devices such as Teflon grafts are employed. It is probable that anticoagulant therapy is not necessary after repair of aortic aneurysms or iliac arteries but it seems indicated in patients who have had operations on the femoral or smaller vessels.

Amputation

Amputation should be performed before pain becomes intolerable and before infection spreads or toxemia develops. It should be performed through tissue in which the circulation is good. This can be judged clinically by vasographic or aortographic examination or by making incisions through ischemic tissue at the time of operation to determine whether or not bleeding occurs.

Special Problems

Intermittent claudication. The ability to walk is a good test of the muscle circulation, for exercise in the presence of ischemia produces pain. Medically this symptom is treated by shortening the stride, teaching the patient to walk slowly, avoiding hill climbing and giving muscle dilator drugs such as nylidrin (Arlidin®) or isoxsuprine (Vasodilan®). Cyclandelate (Cyclospasmol®) is reported to increase walking ability also. It should be pointed out that metabolites, direct limb heating, exercise, hypoxia and epinephrine all increase muscle circulation. The effect of sympathectomy is irregular and at best minimal. Surgical operation on the large vessels often is curative. Usually, intermittent claudication without atrophy or gangrenous changes does not require surgical measures. Excessive lowering of the systemic blood pressures with hypotensive drugs should be avoided and if blood viscosity is greater than normal, as in polycythemia vera, it should be corrected.

Neuropathy. This may be peripheral or radicular, and may be due to peripheral arteriosclerosis with ischemia. Diabetes produces neuropathy which is often bilateral and symmetrical and may precede typical large vessel arteriosclerosis and ischemic neuropathy. Ischemia often produces unilateral abnormalities. Neuropathy due to these causes must be differentiated from that due to pernicious anemia, syphilis, malnutrition, toxic states and nerve compression in and around the spine and lumbar discs. When due to ischemia, with or without diabetes, vitamin B_{12} with B complex (for example, 1 cc. of Vi-syneral®* and 100 mcg. of B_{12} hypodermically daily for 14 days) serves as a therapeutic test. If this is successful, oral therapy may be employed. The vasodilators, Ilidar 25 mg. four times a day and Prisoline, 80 mg. long-acting every 12 hours, may be helpful for neuropathy due to ischemia. On occasion, sympathectomy and large vessel operation may be necessary. The amount of nerve damage depends largely upon the cause, duration and severity of the basic disease.

Night cramps. These are caused often by ischemia, venous congestion from thrombosis or insufficiency, peripheral neuropathy, radiculitis, excessive use of diuretic agents or low sodium diets, poor foot and back posture, hypocalcemia and pregnancy. Treatment involves correction of the underlying cause. Diuretics should be discontinued and sodium administered, proper arch supporters should be used, care of veins in the form of elastic stockings or surgical treatment carried out, and peripheral arterial dilators such as cyclandelate (Cyclospasmol®) 200 mg. at night before bed or nylidrin (Arlidin®, 6 mg. at night) prescribed. Giving quinidine 0.2 gm. with Benadryl® 50 mg. at night is highly effective except in patients with radiculitis and peripheral neuropathy. Dicalcium phosphate is helpful in appropriate cases and aluminum hydroxide gel may help reduce the hyperphosphatemia associated with cramps of pregnancy.

Raynaud's phenomenon. Primary Raynaud's disease attacks young women and is characterized by periodic vasospastic phenomena of the digits as a result of nervousness or cold. Secondary Raynaud's disease may be associated with Buerger's disease, ergotism, diabetes, arteriosclerosis, collagen diseases, syphilis or other disease states. Conservative therapy generally is superior to thoracic sympathectomy because of the epinephrine sensitivity and regrowth of sympathetic nerves after operation. Tranquilizers such as meprobamate in combination with vasodilators such as Ilidar®, long-acting Priscoline® and long-acting beta-pyridyl carbinol (Roniacol®) 150 mg. three times a day are helpful. Use of 2 per cent nitroglycerin ointment locally produces vasodilatation. The cause of the Raynaud's phenomenon must be constantly looked for. Examinations should be made for lupus erythematosus cells, abnormal albumin-globulin ratio, cryoglobulins and hyperglycemia, and should be repeated periodically.

Acute arterial thrombosis of small vessels. Thrombosis of vessels at or distal to the popliteal or brachial arteries may be treated with intravenous heparin and intra-arterial fibrinolysin. Intra-arterial Priscoline®, 25 mg., dilates collateral circulation and passes into the general circulation slowly because of the arterial obstruction. Intravenous alcohol produces vasodilatation and sedation.

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*Multivitamin and mineral preparation.

Peripheral arterial emboli are usually treated surgically as soon as possible, especially if they are proximal to the brachial or popliteal arteries. Some of the measures listed under *arterial thrombosis* in a preceding paragraph are employed concomitantly.

Abdominal aneurysms. Medical treatment involves rest and the maintenance of a moderately low blood pressure. Surgical therapy is indicated if the aneurysm is large, expanding or leaking (as may be indicated by periodic backaches). A vicious cycle is established by an expanding blood vessel, for the greater the diameter the greater the tension of the vessel wall and the greater the possibility of rupture.

Ulceration and gangrene. Conservative treatment of ulceration of the skin involves debridement and drainage, a combination of dilator drugs, including alcohol, Ilidar® and Priscoline®, cultures to identify the organisms, sensitivity tests and appropriate antibiotics locally and orally. Large vessel surgical operation and sympathectomy may be necessary to promote healing. Gas gangrene antitoxin is given if the ulceration and gangrene are extensive.

DISCUSSION

It is apparent that vasodilators must be selected intelligently for the treatment of patients with peripheral vascular diseases so that vasodilatation will be produced in the tissue in which it is needed. The following therapeutic principles should be followed: Cutaneous vasodilators are used in Raynaud's disease and as an aid in healing skin ulcers or retarding atrophy of the skin. Muscle dilators are used for ischemic night cramps, muscle atrophy and intermittent claudication.

The choice of a drug for the treatment of peripheral vascular disease has become more difficult with the increased number of drugs available and it is necessary to understand the way drugs modify the peripheral circulation. A most important yardstick for judging the efficacy of a drug is probably simple observation by the physician and the subjective report of the patient, but objective measurements should be used also. However, in view of the impracticability of trying all the available drugs on all patients, the primary choice should be based on objective fundamental physiologic considerations.

Although it is customary to classify peripheral vascular diseases as organic (occlusive) or functional (spasm or vasoconstriction) it is rare that any clinical entity will fall into either category exclusively. Rational therapy for these two basic situations is distinctly different. Disorders producing organic occlusion respond to procedures which direct blood around the occluded area by opening collateral vessels or remove the occlusion by surgical or possibly by enzymatic action. In contrast, treatment of functional circulation abnormalities involves dilatation of vessels by release of excessive vasoconstrictor tone or by other appropriate means. Because of the association of the two types of disorders, it becomes important to assay the relative importance of each. It is therefore necessary to analyze each case carefully to determine the proper course of treatment. One should remember that altered vascular reactivity of vessels to stimuli or drugs may occur in various disease states such as pheochromocytoma, etc., and therefore careful clinical studies are required before drugs are administered. The possibility of diversion of blood away from a diseased area by drugs should be borne in mind. Also, combined therapy is usually advisable for the treatment of peripheral vascular diseases employing drugs which have different sites of action in order to produce additive effects.

The medical care of patients with peripheral arteriosclerosis involves long term follow-up treatment by the internist. It is often advisable to increase the circulation locally by surgical operation—for example, with thromboendarterectomy or a sympathectomy—and at all times close cooperation with the surgeon is mandatory. Usually the work of the surgeon is short-term and does not involve the total care of the patient and his numerous problems.

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Appendicitis and Pregnancy

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• In 74,000 obstetrical patients at Los Angeles County Hospital the incidence of acute appendicitis in pregnancy was 0.05 per cent. In a study of 36 cases of clinically diagnosed appendicitis in pregnancy between 1956 and 1960, it was shown that the fetal and maternal morbidity and mortality were decreased when a definite operative procedure was done early. The difficulty in diagnosis is increased by the necessary consideration of pyelonephritis and twisted ovarian cyst. Rupture of the appendix increased hazards to maternal and fetal survival. It was noted also that threatened premature labor may indicate a ruptured appendix. Emergency operation with the use of antibiotics in such cases was effective therapy. The incidence of premature delivery was proportionate to the delay in operating. If operation was performed in less than eight hours after admission to the hospital, there was no maternal or fetal loss. A delay greater than eight hours resulted in a 17 per cent fetal loss in premature delivery and 4 per cent fetal loss of infants at term.

APPENDICITIS in a pregnant or a postpartum patient is a serious problem. Diagnosis is difficult in these conditions and delay in diagnosis and definitive therapy may have severe consequences for mother and fetus.

Studying the problem is beset with obstacles. True incidence is difficult to determine from hospital records, for in some cases appendicitis may be suspected but the diagnosis not recorded unless the patient is taken to surgery and in others the diagnosis may have been entertained but not recorded because another condition was found at laparotomy. This tends to limit the data on incidence to cases in which a clinical diagnosis of acutely inflamed appendicitis is confirmed at operation.

METHOD AND MATERIAL

In the present study, the clinical charts of all patients at the Los Angeles County General Hospital with diagnosis of pregnancy and appendicitis between 1957 and 1961 were reviewed. During this five-year period, there were approximately 56,000 deliveries and 18,000 nonterm pregnant patients admitted. Within this group, there were 36 cases of clinically diagnosed acute appendicitis, an incidence of 0.05 per cent. Twenty-nine patients were antepartum at the time of diagnosis and seven were within six weeks postpartum. Appendectomy was carried out in 35 of the patients. One patient had ovarian cystectomy only and three others had ovarian cysts removed as well as the appendix. Diagnosis was confirmed by microscopic examination in 21 of the antepartum patients and in six out of the seven postpartum patients. Clinical accuracy in diagnosis was 75 per cent (Table 1).

The age range of the patients was 18 to 40 years, the majority being in their twenties. The parity of these women also was of wide range—zero to 15, the majority being one to four. Two cases occurred in the first trimester, 11 in the second, and 16 in the third.

Since there is much discussion as to the difficulty of making a diagnosis of appendicitis in pregnancy, we analyzed the frequency of the classical signs and symptoms of appendicitis. The chief complaint of the patients was abdominal pain, the pain generally beginning in the upper abdomen and shifting to the right lower quadrant, with associated anorexia, nausea and vomiting (Table 2). Eleven patients, however, did not have shifting pain—only localized pain in the right lower quadrant. Several others emphasized radiation of the pain to the right flank. Less than half the patients were constipated. All patients in this series had right lower quadrant tenderness, although the point of maximum tenderness varied according to the length of gestation. The majority also had rebound tenderness, right-sided tenderness on rectal examination, and decreased bowel sounds. Only eight patients had positive psoas and Rovsing's sign.

During pregnancy, increased leukocyte content that does not go above 12,000 per cu. mm. of blood is not considered indicative of infection.[6] Seven patients in the present series with an inflamed ap-

TABLE 1.—*Incidence of Appendicitis in Pregnancy and the Puerperium, Los Angeles County Hospital, 1957-1961.*

Total obstetrical patients		74,000	
Total with clinical diagnosis of appendicitis*		36	0.05%
Antepartum	29		
Postpartum	7		
Appendectomy performed		35	

*Diagnosis confirmed by pathology in 27 cases—75 per cent.

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Presented before the Section on Obstetrics and Gynecology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

TABLE 2.—*Presenting Symptoms and Signs of 29 Pregnant Patients with Clinical Diagnosis of Appendicitis.*

	Diseased Appendix 21 Cases		Normal Appendix 8 Cases	
	Number	Per Cent	Number	Per Cent
1. Abdominal pain shifting to RLQ	12	57%	1	12%
2. Right lower quadrant pain only	8	38%	3	38%
3. Pain in RLQ radiating to flank	2	9%	3	38%
4. Nausea and vomiting	16	76%	6	75%
5. Anorexia	13	62%	5	62%
6. Constipation	7	33%	1	12%
7. Fever	4	19%	1	12%
8. Right lower quadrant tenderness	21	100%	8	100%
9. Rebound tenderness	15	71%	3	38%
10. Rectal tenderness on the right	14	67%	5	62%
11. Decreased bowel sounds	11	52%	3	38%
12. Temperature > 100°	10	48%	2	25%
13. Positive Psoas and Rovsing signs	6	29%	2	25%

pendix had a leukocytosis below that level and 14 patients had a count greater than 12,000 per cu. mm. In two patients with a normal appendix leukocytes numbered fewer than 12,000 per cu. mm. and in six patients it was greater than 12,000. In only one patient, whose appendix was ruptured, did leukocytes exceed 20,000 per cu. mm.

The postpartum patients were consistent only in the complaint of pain in the right lower quadrant of the abdomen, confirmed as tenderness in this area by the examining doctor. The accompanying symptom most commonly present was anorexia. In addition only half of the patients had fever, vomiting, constipation or urinary symptoms. In all cases the differential diagnosis was between acute appendicitis and acute salpingitis. Four patients had definite right adnexal tenderness and three others had a foul cervical discharge, but all of them also had an inflamed appendix. The one patient whose appendix was normal and who had right unilateral acute salpingitis, had no adnexal tenderness, but was exquisitely tender at McBurney's point. She was three days postpartum at the time the symptoms developed. In all but one postpartum patient, the leukocytes numbered more than 12,000 per cu. mm.

TREATMENT

The primary treatment of these patients was surgical. Whenever the diagnosis of acute appendicitis was definitely made on clinical grounds or could not be ruled out as the cause of persistent pain in the right lower quadrant of the abdomen, operation was scheduled as an emergency.

The abdomen was opened through a high right transverse muscle-splitting incision in 31 cases, and through a right paramedian incision in five cases. In all but one case the appendix was removed regardless of its gross appearance. In one instance a right ovarian parasitic dermoid cyst was found and the appendix, which was observed to be normal, was not removed. Although the appendix appeared normal in several cases, microscopic examination showed acute inflammation. In no case was the pregnancy terminated concomitantly by cesarean section.

As a prophylactic measure, ancillary antibiotic therapy—with penicillin and streptomycin or achromycin—was begun preoperatively in all cases of suspected ruptured appendicitis, in all postpartum patients, and in half of the second and third trimester patients. If pronounced suppuration or definite rupture of the appendix was observed at laparotomy, intravenous administration of antibiotics was begun immediately.

Progesterone was used in both of the patients operated upon in the first trimester, in six of eleven in the second trimester and in seven of 16 third trimester patients. Neither of the first trimester patients showed any signs of threatened abortion, nor was there any indication of a relationship between the administration of progesterone and early delivery in the second trimester patients. Of the third trimester patients, those who received progesterone showed a greater tendency to go into premature labor than those who did not receive it. However, progesterone was not thought to be significant in precipitating premature labor.

MATERNAL AND FETAL OUTCOME

The seriousness of appendicitis in pregnancy is reflected in both maternal and fetal outcome, and can be directly related to the rapidity with which the above therapeutic regimen is carried out (Table 3). A period of eight hours was arbitrarily selected as a reasonable time to make the definite diagnosis of appendicitis and get the patient to the operating room. The patients who were operated upon within eight hours after admission to the hospital had few postoperative complications. In patients who went longer before operation, morbidity, including fever, ileus, urinary tract infection or wound infection was twice as common.

There was one maternal death. The patient, 36 weeks pregnant, entered the hospital after two days of abdominal pain, at first about the umbilicus and later shifting to become localized in the right lower quadrant. Pronounced right lower quadrant tenderness was present. The uterus was irritable, the cervix undilated. Fetal heart tones were strong and regular. Threatened premature labor, silent placenta abruptio and acute appendicitis were considered. Twenty hours after admittance to hospital a diagnosis of ruptured appendix was made and operation was promptly done. Widespread peritonitis had resulted from ruptured suppurative appendicitis. Three days after operation the patient became febrile, uremic and jaundiced and the abdomen was distended. She was delivered of a term stillborn infant on the fourth day and died on the fifth postoperative day. At autopsy, peritonitis, acute tubular necrosis of the kidneys and pronounced fatty changes in the liver were noted.

Both patients whose appendix was removed during the first trimester were delivered of living infants at term. Six of 11 patients operated upon in the second trimester and seven of 16 in the third trimester had premature delivery. Sixty-two per cent of these premature deliveries occurred within the first four postoperative days and thus must be considered to be related to the appendicitis and the operative procedure in the mother.

No patient in whom operation was done within the eight-hour period lost her baby. In the group of patients in whom operation was delayed, four had stillborn infants and one a premature infant who died in the neonatal period. Fetal heart tones had been heard in all patients who later were delivered of a stillborn infant. Thus total fetal loss in patients with delayed operation was 17 per cent. Three of the five infant losses occurred in patients with ruptured appendix.

Postoperative maternal morbidity and fetal loss was greater in patients with a perforated appendix than in the remainder of the group (Table 4).

DISCUSSION

A survey of the previous reports on appendicitis in pregnant women shows that most observers believe this to be a distinct and serious problem.[7,9,10] This opinion has recently been challenged by Bassett[1] who expressed belief that the disease is not much different in pregnant than in nonpregnant patients.

The incidence of 0.05 per cent in the present study is somewhat lower than that given by other investigators[2,4]—0.1 per cent to 0.17 per cent. Our figure almost certainly would have been higher if all cases of right lower quadrant abdominal pain in which the diagnosis was considered could have been included in this series. The incidence of pregnancy in women with appendicitis is 2 per cent.[2]

TABLE 3.—*Relationship Between Delayed Operation, Maternal Morbidity, and Fetal Loss in 29 Antepartum Patients.*

	Less Than 8 Hours Delay	More Than 8 Hours Delay
Maternal morbidity	4	9
Maternal mortality	0	1
Premature delivery:		
Living—Discharged well	3	6
Living—Neonatal death	0	1
Stillborn	0	3
Percentage fetal loss	0	14%
Term delivery:		
Living—Discharged well	8	7
Living—Neonatal death	0	0
Stillborn	0	1
Percentage fetal loss	0	3%

Clinical accuracy in diagnosis—with both the obstetrical and surgical staff agreed upon the diagnosis and operative therapy—was 72 per cent in the present series (Table 1). This is higher than the 42 per cent reported by Bryan[3] and 50 per cent by Dickison.[5]

A wide range is also found in the literature when the incidence of appendicitis is related to the stage of gestation. Black[2] noted no difference between one trimester and the next; Burwell[4] found it three times more common in the first than in the third trimester, and Dickison[5] reported 70 to 80 per cent in the first six months. The majority of the patients in the present series were in the third trimester.

Most patients with appendicitis—especially in the first six months of pregnancy—present the classical findings of abdominal pain shifting to the right lower quadrant, accompanied by anorexia, nausea and frequently vomiting and constipation. Even though, later in pregnancy, the point of maximum tenderness shifts upward and lateral from McBurney's point, there is still definite right lower quadrant tenderness. Rebound tenderness and rectal tenderness high on the right side are additional diagnostic signs present in well over half the cases.

Leukocytes may number as many as 12,000 per cu. mm. in normal pregnancy.[6] Twice as many of the patients in the present series had counts greater than 12,000 as had counts less than 12,000. In cases in which leukocyte count was done more than once before operation there was a moderate rise between the earlier and the later. This increasing count is considered by some investigators[8] to be the only reliable laboratory aid. A leukocyte count greater than 20,000 does not necessarily indicate peritonitis.

TABLE 4.—*Outcome of 5 Cases of Perforated Appendix.*

	Weeks Gestation	Diagnosis/Labor Abruptio	Surgical Delay	Maternal Morbidity	Maternal Mortality	Delivery
Case 1	38	+	7 hours	0	0	Term 3 hours postoperative Living child
Case 2	36	+	56 hours	0	0	Premature 2 hours postoperative Living child
Case 3	36	+	22 hours	+	+	Term 4 days postoperative Stillborn
Case 4	22	0	13 hours	+	0	Premature 2 days postoperative Neonatal death
Case 5	25	+	20 hours	+	0	Premature 2 hours postoperative Stillborn

Nor is the converse true: In only one case of five did the leukocyte content exceed 20,000 per cu. mm. of blood in patients with a ruptured appendix.

DIFFERENTIAL DIAGNOSIS

The differential diagnoses to be considered in antepartum cases are primarily pyelonephritis, twisted ovarian cyst and the round ligament syndrome. Especially in the second and third trimesters, the most difficult distinction is between appendicitis and pyelonephritis. Appendicitis was considered in all cases. Pyelonephritis was considered in 16 of 36. In pregnancy the enlargement of the uterus displaces the appendix upward and laterally,[2] thus shifting the pain of appendicitis to a higher point. This causes frequent discomfort in the right flank and radiation to the right costovertebral angle area. It is this finding of right flank and back tenderness with a few white blood cells in the catheterized urine specimen that leads to confusion. The significance of a small number of white cells in repeated analyses of the urine is difficult to evaluate. This finding may be due to local reaction around the ureter from a retrocecal appendix; or there may be no abnormalities in the urine in the presence of pyelonephritis with right ureteral obstruction and hydronephrosis. An intravenous pyelogram may be necessary to make the distinction.

Twisted ovarian cysts may also rise out of the pelvis with advanced pregnancy, but they should be readily palpable. Cysts lying out of the true pelvis will produce pain high in the right lower quadrant of the abdomen. Even though in none of our cases was there a right lower quadrant mass palpable, this diagnosis was considered in 40 per cent of the cases. Small subserous fibroids may become infarcted during pregnancy and become painful, but are usually palpably connected to the uterus.

The possibility of round ligament syndrome was mentioned in four cases. The stretching of the round ligament and the enlarging of broad ligament varices may cause significant pain in the right lower quadrant of the abdomen, especially in the presence of dextrorotation of the uterus. However, pain on this basis has no accompanying gastrointestinal symptoms and is usually readily relieved by rest and position change.

If one is considering the possibility of acute appendicitis in a woman in the third trimester, and on examination of the abdomen he feels an irritable uterus, suggesting threatened premature labor, the appendix may have already ruptured. Generalized tenderness is not always present in these circumstances. Threatened premature labor or abruptio placenta was considered in four of five patients with a ruptured appendix in the present series. Due to the large contractile mass of the uterus, infection is not manifest as a localized abscess and peritoneal irritation from the wider inflammatory reaction may be the initiating factor in premature labor.[2]

In the first trimester, the possibility of ectopic pregnancy must be considered. Although the uterus may be enlarged, an adnexal mass and tenderness are present in ectopic gestation. In one of the cases in the present series the patient was put in hospital the week before laparotomy for observation because of pain in the right lower quadrant of the abdomen and was discharged with the diagnosis of possible unruptured ectopic pregnancy. At operation a ruptured right ovarian cyst was seen and the appendix was normal. As uterine enlargement in this case had not displaced the appendix, the tenderness was at McBurney's point.

In the postpartum period, diagnostic consideration has to be given to the possibility of salpingitis. A past history of pelvic infection and the presence of foul-smelling heavy vaginal discharge as well as true adnexal tenderness are helpful points in distinguishing this disease from appendicitis. After-birth pain, noted as a factor in some cases by Burwell and Brooks,[4] was not a consideration in any of the cases in the present series.

Prompt operation is the key to successful therapy. One cause of delay is that the patient may be slow to seek medical attention, attributing the pain to the general discomfort of pregnancy. Also, the physician may hesitate to operate during pregnancy, fearing abortion or premature delivery. In this regard it must be borne in mind that surgical operation has been shown to have no effect, *per se,* on gestation.[6]

The present study seemed to indicate an eight-hour limit in which to make a definitive diagnosis and carry out operation. If a definitive diagnosis and decision for operation was not made within this eight-hour limit, the tendency in most cases was to extend the delay to 24 or more, which was dangerous to mother and fetus. Hence successful treatment of appendicitis in pregnant women requires prompt diagnosis and immediate surgery for maximum maternal and fetal survival.

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Cancer Therapy

Evaluation of Supervoltage X-Ray—A Review of the Literature

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• **Statistical evidence is presented to suggest that cure rates achieved by supervoltage are not significantly different from those achieved by orthovoltage in carcinoma of the tonsil and of the ovary.**

AT ITS FORTY-FIRST ANNUAL MEETING in December 1955 the Radiological Society of North America held a symposium on supervoltage therapy[2] to evaluate the further role of 250 kv. therapy. The discussants did not favor junking this modality. While not complete, evidence as to whether supervoltage therapy is better than 250 kv. therapy would seem to be worth evaluation.

There is no question that proportionally the depth dose as measured physically is greater in the supervoltage than in the orthovoltage range. But the meaning of this larger figure when evaluating the effect of supervoltage in curing cancer is not clear.

The results of radiotherapy depend on a very complex set of circumstances. The higher depth dose may and in fact in some cases does produce severe damage to structures in its path about the tumor, and the assumption that a greater number of cures will result because of dose increase must be balanced against the well documented fact, established by the French school of radiologists about 25 years ago, that severe damage to the tumor bed lessened rather than increased the proportion of cures. In any event, a different "dose" is only meaningful if more "cures" result.

In order to evaluate this point, two forms of cancer were selected for review. Cancer of the tonsil was chosen as an example of a relatively accessible tumor, and cancer of the ovary as an example of deep seated disease. All conveniently available articles found in the literature were reviewed and a list was made of the number of cases treated, the number of five-year survivals, and the voltage range. Articles not stating the voltage were not excluded, nor were cases treated with teleradium excluded. The data thus completed were checked by analysis of variance for the significance of the distribution. In both cases (Tables 1 and 2) the groups were random, with about 0.5 per cent chance of a significant variation. In simple language, this means that all cure rates in the groups are identical, differing only because of the accidents of sampling. In order to make this visually evident, data on the two groups were graphically plotted, each cure rate and its standard deviation being given in order of ascending magnitude. Each rate was coded to indicate voltage. These graphs (Charts 1 and 2) well show the random distribution of the voltage keys. In fact, supervoltage tends to fall in the middle register of one and in the lower register of the other graph.

While there is undoubtedly considerable variance from report to report with regard to distribution of material, this last observation would appear to me to raise serious question as to the possibility of a real difference being obscured. Although this is strictly true of only the two diseases studied, I can see no reason to believe that they are different from other forms of cancer in this regard.

Since this evidence would suggest that the increased cost of supervoltage is not associated with better cure rates, I believe that we should direct our endeavor to more profitable areas. Whether the 200 MEV range has more to offer, or whether we have exhausted the possibilities of improved therapeusis by voltage increase, I cannot pretend to answer.

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Submitted October 13, 1961.

TABLE 1.—*Data from the Literature on 5-Year Arrests of Carcinoma of Tonsil*

Author	Kv. Used	N Number Treated	5-Year Survival	X/N X 5-Year Survival	Per Cent X^2	X^2/N
Berven[1]	H.	46	11	23.9	121	4.8435
Clifton & Harden[4]	N.	19	1	5.3	1	.0526
Coutard[5]	180	65	21	32.3	441	6.7846
Dancot[6]	180-200	89	14	15.7	196	2.2225
Ennuyer & Bataini[7]	H.	534	96	18.0	9216	17.2584
Friedman and coworkers[8]	2000	12	1	8.3	1	.0833
Maier[15]	Ra.	47	12	25.5	144	3.0626
Martin & Sugarbaker[16]	200-250	157	26	16.6	676	4.3058
Parschall & Stenstrom[18]	200-220	84	22	26.2	484	5.7619
Scanlon and coworkers[19]	N.	46	20	43.5	400	8.6956
Schall[20]	190	75	4	5.3	16	.2133
Schönbauer[22]	Ra.	104	13	12.5	169	1.6250
Sheline, Jones & Morrison[23]	200	25	4	16.0	16	.6400
Sheline, Jones & Morrison[23]	1000	11	2	18.2	4	.3636
Teloh[25]	N.	142	7	5.0	49	.3465
Walker & Schultz[26]	200	18	1	5.6	1	.0556
Walker & Schultz[26]	1000-2000	21	5	23.8	25	1.1905
Total						57.5053
Summation all cases		1495	260	17.4	$\frac{260^2}{1495}$	= 45.2174
		Difference				12.2879

$S^2_A = 12.2879 \div 16 = 0.7680$

$S^2_W = .174 \times .826 = 0.1437$

$\chi^2 = .7680 \div .1437 = 5.3444$

$K = -2.480$

$p = 0.9934$

TABLE 2.—*Data from the Literature on 5-Year Arrest of Carcinoma of Ovary*

Author	Kv. Used	N Number Treated	X 5-Year Survival	X/N Per Cent 5-Year Survival	X^2	X^2/N
Chu[3]	1000	112	29	25.8	841	7.5089
Henderson & Bean[9]	H.	265	48	18.1	2304	8.6943
Holmes & Schulz[10]	1200	25	6	24.0	36	1.4400
Holme[11]	N.	138	49	35.5	2401	17.3985
Jacobs & Stenstrom[12]	200	31	11	35.5	121	3.9023
Javert & Rascoe[13]	N.	59	18	30.5	324	5.4915
Kerr & Elkins[14]	200	190	58	30.5	3364	17.7053
Munnell, Jacox & Taylor[17]	180	200	55	27.5	3025	15.1250
Munnell, Jacox & Taylor[17]	250	148	41	27.9	1681	11.3581
Schmitz & Majewski[21]	800	143	29	20.3	841	5.8811
Sisson & Garland[24]	200	135	27	20.0	729	5.4000
Wheelock and coworkers[27]	N.	48	13	27.1	169	3.5208
Total						103.4258
Summation All Cases		1494	384	25.7	$\frac{384^2}{1494}$	= 98.6988
		Difference				4.7270

$S^2_A = 4.727 \div 11 = 0.4297$

$S^2_W = 0.257 \times 0.743 = 0.201$

$\chi^2 = .4279 \div .201 = 2.1378$

$K = -2.8191$

$p = 0.9976$

Code for Tables 1 and 2:

Under heading "kilovolts used": N.—not stated; H.—"High voltage" not stated exactly; Ra.—radium bomb teletherapy. The first two of these should be considered in the orthovoltage range, the third supervoltage.

Under the calculations, "K" is calculated by the following formula:

$$K = \frac{\sqrt[3]{\frac{\chi^2}{n-1}} + \frac{2}{9(n-1)} - 1}{\sqrt{\frac{2}{9(n-1)}}}$$

where n is the number of lines in the table.

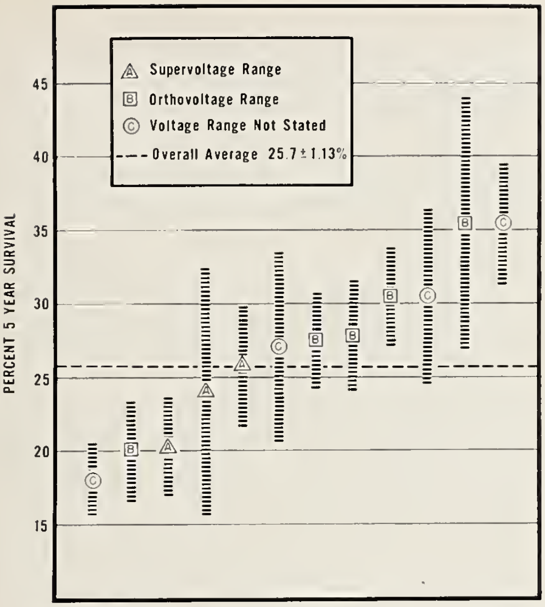
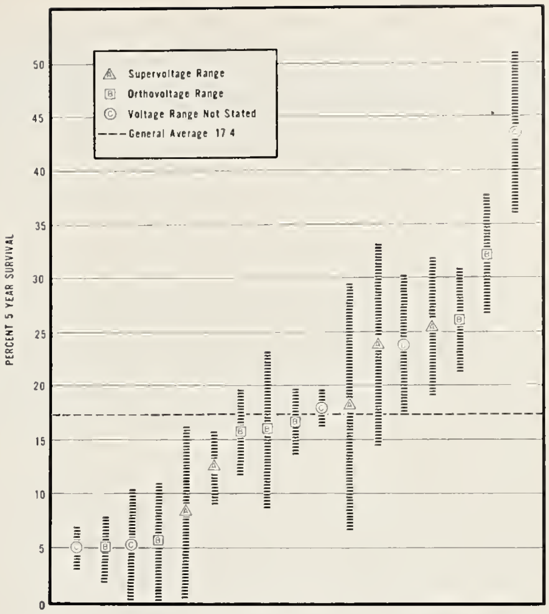


Chart 1.—Results of radiotherapy in carcinoma of the ovary.



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The Enigma of Circulating Malignant Cells

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• There is no doubt that cancer cells do enter the circulating blood of persons with malignant lesions. Differentiation of them from other atypical cells found normally in the bloodstream is at present being studied.

Investigators have expressed belief that most of the circulating malignant cells in the early stages of the disease are destroyed by host resistance. Surviving cells, however, develop into occult metastatic emboli which may remain quiescent until host defenses collapse. Clinical measures for the active control of these dormant implants have not been evolved as yet.

Inasmuch as the mechanism of host resistance is still beyond clinical comprehension, the only known way to improve survival rates is the universal application of practical clinical methods for preventing iatrogenic disseminations, for devitalizing malignant cells and for apprehending emboli that may have left the main lesion just before surgical operation.

Since it adequately eradicates primary sources of cell dissemination, conventional radical resection is still the treatment of choice for dealing with early solid neoplasms.

While it is possible to control early primary solid malignant neoplasms locally by adequate surgical ablation, deep irradiation therapy or regional perfusion and infusion with chemotherapeutic agents, some patients so treated still die of metastatic disease.

Recognizing that these deaths are due to hematogenous dissemination, clinical and experimental investigators have recently intensified their searches in this area of oncology. Questions that are at present being given a good deal of attention are: (1) The actual presence or positive identification of malignant cells in the circulating blood; (2) the ultimate disposition of these cells in the body and the problem of occult metastasis; (3) the prevention and control of cell dissemination; and (4) the current status of curative radical surgical treatment in the light of accumulating knowledge of these circulating malignant cells.

They are particularly important at present, for opinion in the current literature is divided between proposals for ultraconservative modifications of conventional radical procedures on one side of the scale and ultraradical dissections on the other.

1. *The Presence and Identification of Cancer Cells in the Circulation*

Under this heading there are three major questions to clarify: (a) Are all the circulating atypical or abnormal cells actually malignant emboli? Raker and associates,[23] in studies of specimens of blood taken from 144 patients, all but nine of whom had tumors, found only two specimens positive for malignant cells. Sixty patients were found to have megakaryocytes, which at first were thought to be malignant cells. However, accumulating experience has led to progress in the isolation, preparation and identification methods.[22] (b) Are these circulating cells viable? Recent clinical investigations[18,19] have proven that cultures could be made from cells recovered from the blood of patients with certain types of malignant lesions. (c) If viable, what is the clinical significance of their presence? Because the ultimate survival of a particular patient cannot be definitely correlated with the presence of cancer cells in the bloodstream, the prognostic significance of this condition is not well understood. Recently, however, Roberts and coworkers,[24] in a study of 283 patients, noted that the survival rate for patients in whom "cancer cell showers" were observed during an operative procedure was one-half that for patients with blood specimens that were negative for malignant cells at the time of operation.

2. *The Ultimate Fate of Circulating Malignant Cells in the Body and the Problem of Occult Metastasis*

Willis[27] in a review of the observations of various investigators on experimental metastasis, concluded that many of the tumor cells injected experimentally into the bloodstream perish in the lungs. This conclusion was based on observations that, after injection of cells intravenously, tumors did not always develop in the lungs and degenerated tumor cells were frequently seen in the pulmonary arterioles. He also concluded that successful tumor transplants were obtained only when more than a certain minimum amount of tumor cells were injected, and if the minimum effective quantity were introduced at in-

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Submitted April 10, 1962.

tervals in divided doses, usually no tumors resulted in the lungs. Jonasson[15] concluded from studies in rats that the presence of cancer cells in the circulating blood is not always followed later by development of metastatic lesions.

Recent experimental findings imply that the liver also plays a part in the natural defense of the body against embolic cancer cells. The Fishers[8] found that when they damaged the reticulo-endothelial system of the liver, artificially induced hepatic lesions "took" better; and Chan and coworkers[3] found that hepatic metastasis occurred more often in animals with artificially damaged livers than in controls. Fletcher and Stewart,[10] in their clinical study of prehepatic and posthepatic blood cancer cell titers in lesions of portal-drained organs of the abdomen, noted that the liver "filtered" cancer cells. The role of the spleen in the overall defense of the body is not quite well understood.

Roberts and coworkers,[25] isolated cancer cells from the circulating blood of four of five patients undergoing diagnostic curettage for endometrial malignancy. Cutler and coworkers[7] in their clinical studies of 2,331 stage-I cases of endometrial carcinoma treated by hysterectomy, noted a 58 per cent five-year survival rate. Assuming, from the Roberts report, that cancer cells are disseminated in a high proportion of cases during preliminary diagnostic uterine curettage, we can speculate, from Cutler's study, that the host defense can cope with embolic cancer cells in about half of early endometrial carcinoma cases.

Assuming that a majority of the circulating loose cells perish in the arterioles of the lungs, in the liver and in other organs of the body, just what happens to those cells that survive? From the postmortem lung studies of Willis,[27] four stages in the transformation of embolic cells into metastatic lesions can be defined: (a) Embolic single cells or clumps of cells within the lumen of end-arterioles; (b) formation of thrombi around the emboli; (c) organization of the thrombi (or fibrosis culminating in death of the embolic cells) and formation of nutrient arterioles with subsequent invasion of the vascular walls; and (d) extravascular growth of surviving implants.

What has been done clinically in attempts to control the above-mentioned phases? Morales and coworkers[20] used chemotherapeutic agents systemically at the time of operation as a prophylactic measure to control loose cells that may have exfoliated a short time before operation or during the procedure. With regard to thrombotic clumps, current experimental studies are encouraging. The Fishers,[9] in their investigations of hepatic metastasis, found that thrombolytic agents, particularly heparin, apparently prolonged the stay of cells in the circulating blood, thereby possibly extending the exposure of the cells to the action of natural host defenses. Whether a feasible plan of therapy based on fibrinolytic action could be applied clinically as a surgical or chemotherapeutic adjunct remains to be seen.

THE PROBLEM OF OCCULT METASTASIS

Once the thrombotic clumps develop their own nutrient arterial supply, they become metastatic lesions and as such are more difficult to control than emboli. They may remain clinically occult for unpredictable periods until some triggering mechanism, yet unclear, provokes them to wild autonomous growth.

The existence of these systemic occult implants is the bane of adequate primary surgical resections, because what may have been deemed as "curable" may be in actuality just "resectable." Current standard methods for clinical detection of these quiescent autografts, such as pulmonary and skeletal radiographic surveys, intravenous pyelograms or liver function studies, are admittedly crude and unreliable in early cases. Routine bone trephining biopsy, as of the lumbar vertebral spine in breast tumors,[12] or bone-marrow aspiration biopsies as in sarcomas of the extremities,[21] are helpful only if found positive. Needle biopsy of the lungs or liver is not clinically applicable routinely for preoperative screening purposes.

Until bone marrow shielding or sparing techniques can be perfected, total body irradiation or massive systemic chemotherapy for the control of occult metastasis cannot be used. The part immunologic processes play in the early stages of neoplastic diseases is still under intensive investigation. The benefits derived from the alteration of hormonal environment by early ablation of the gonads, adrenals or hypophyses in the management of hormonally dependent tumors have not been clarified as yet.

3. *The Prevention and Control of Cell Dissemination*

Cancer embolization takes place at various periods in the course of solid neoplastic diseases:

1. At the preoperative period, by spontaneous dissemination. Recently, Romsdahl and coworkers,[26] found that in two of six patients with resectable primary melanoma, two had cancer cells in peripheral blood specimens before operation. When regional node dissection was done no microscopic evidence of nodal involvement was found in one case whereas in the other case two of thirteen nodes removed were positive for malignant disease. Whether this situation holds true in early, less in-

tense types of solid neoplasms is still undetermined. The possible dissemination of cells from early undiscovered lesions by the pressures and stresses of normal body motions or by external massage is beyond control.

2. At the time of diagnostic and operative manipulations. Grove[11] and Jonasson and associates[16] observed definite relationship between the occurrence of cells in the circulating blood and the pressing or manipulating done in the course of diagnostic examination or surgical operation.

3. After the formation of local or regional recurrences, as well as after the formation of systemic secondary implants. In most cases of sarcoma of the limbs, regional and recurrent growths have been prevented by primary radical ablation. The control of dissemination in late stages of the disease obviously offers no benefits.

CURBING IATROGENIC METASTASIS

As a measure for prevention and control of iatrogenic metastasis, ways have been worked out to reduce the volume and vitality of potentially escaping tumor cells.

Reducing the Volume of Cells

Cole[4] cautioned against the massaging effects entailed in cleansing the area over palpable tumors by washing with soap and water. In the future, the use of antiseptic aerosprays or compresses for this purpose may become routine.

In dealing with lesions of the extremities, the use of two tourniquets during preliminary biopsy procedures, one placed proximal to the tumor and the other above it, with the proposed site of amputation between them, as described by Hayles and coworkers[13] is ideal and commendable. With the tourniquet compression, both the main and collateral venous outlets are kept under control during the surgical procedures. In addition, cancer cells dislodged during the excision of biopsy material would be kept beyond the amputation site.

Ligation of the principal venous outlets in the early stage of surgical dissection, as described by Cole[5] in colon resections, by Martin[17] in routine radical neck dissections and by Byron and coworkers[1] in radical amputations of limbs, tends to reduce the volume of disseminating cells at the time of operative manipulations.

Reducing the Vitality of Cells

One method used by some investigators to lessen the vitality of embolizing cells is the preoperative introduction of chemotherapeutic agents into the main nutrient artery of the primary lesion. In selected cases, Creech and coworkers[6] utilize regional massive chemotherapeutic perfusions with the help of an extracorporeal apparatus. Byron and coworkers[1,2] introduce the chemicals directly into the artery that supplies the area of the lesion just before beginning the ablative procedure.

External deep irradiation in therapeutic doses before surgical extirpation of tumors of the head, neck and breast has been done for years.

Hoye and Smith[14] in studies of mice noted that when a solution containing cancer cells taken from the parent lesion and lightly irradiated was injected parenterally before operation the incidence of pulmonary metastasis was reduced 90 per cent.

Some two years ago at the City of Hope Medical Center a pilot study was begun on the use of rapid massive deep irradiation therapy as an adjunct to radical amputations for sarcoma of the limbs. A total dose of 5,000 rads was administered in daily doses of 1,000 rads for five days, followed on the seventh day by radical amputation. In addition, chemotherapeutic agents were infused into the main nutrient artery of the tumor to devitalize whatever viable cancer cells remained. Just before infusion, the main venous outlets were ligated to hold the chemicals within the affected limb and to keep disseminating cells from getting into the circulation. Not enough time has passed for an appraisal of the effect of this combined procedure.

4. *The Status of Radical Excision in the Light of Accumulating Knowledge of Circulating Malignant Cells*

Except for most sarcomas and some virulent forms of carcinoma, comprehensive statistics at present consistently indicate that five-year survival rates after conventional early radical extirpation in most cases of operable lesions of the kind that progress "stepwise" are very much better than for untreated cases. Radical resection of early primary lesions and the regional areas of secondary spread removes the immediate as well as future sources of cell embolization, but the extent of radical resection in either the "stepwise" or the "explosive" types of tumors should always be determined by the circumstances in each case—by the natural history of the lesion, its metastatic potentialities, the specific biologic course in the particular patient and by the size, stage and location of the lesion.

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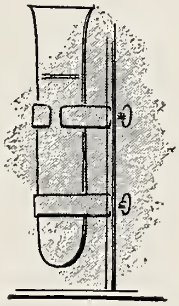

Geriatric Rehabilitation

The Challenge and the Goal

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• A geriatric rehabilitation program at Mt. Sinai Rehabilitation Hospital in Los Angeles (which had been a custodial hospital) demonstrated the effectiveness of newer methods in rehabilitation in restoring chronically disabled elderly patients to a new level of physical, psychological and social performance.

Efforts to restore morale in patients long resigned to invalidism, to make them want to live socially, to make them useful to themselves and others and to improve their physical condition brought gratifying and in some cases dramatic results.

THE MOST SERIOUS CHALLENGE currently facing medicine in Rusk's[2] view, is the increased incidence of both chronic diseases and chronic disability among the older segments of the population. In a recent report by a United States Senate Subcommittee on Problems of the Aged and Aging, Dr. Rusk is quoted as saying, "Rehabilitation of the chronically ill and chronically disabled is not just a series of restorative techniques—it is a philosophy of medical responsibility."

In the United States there are approximately 17,000,000 persons in the age group 65 and over. Of this number approximately 5 per cent are in institutions, mostly in long term facilities.[3] A recent study indicates that the proportions of the aged with one or more chronic conditions range from 74.7 per cent to 82.0 per cent, depending upon geographic location.[4]

In view of the proportionally large and increasing numbers of elderly disabled persons, medical programs of one kind or another have been developed and are being developed to meet the existing and rapidly expanding need. However, the problem of establishing adequate medical and rehabilitation services for the aged in the face of personnel shortage, lack of funds and the passive attitude which prevails on the part of some physicians and the community toward the disabled aged is a great one. As was stated in a report by a committee of the United States Senate,[1] "The ultimate value against which the several proposed approaches to the problem should be weighed involves not only the question of the soundest approach to financing medical care for the aged; it rests also on the increasing belief in the possibility of extending human life under conditions of dignity and creative activity, and using the best of modern medical science toward this end."

In this respect it is almost axiomatic that elderly, disabled patients who might otherwise be rehabilitated, at least to some degree, with good medical care, nursing care and rehabilitation services are allowed to vegetate and regress physically, emotionally and spiritually. With proper treatment and the newer knowledge now available it is estimated that 25 to 30 per cent of the elderly patients in institutions could be rehabilitated sufficiently to achieve a degree of independence consistent with return to their own homes or to a more socially desirable climate in a modern boarding home or rest home facility. That this is not a figment of the imagination or an idle dream has been demonstrated on a small scale at the Mount Sinai Rehabilitation Hospital in Los Angeles.

In January, 1961, an extensive reorganization* of the Eastside Mount Sinai Hospital or Custodial Care Home was initiated by action of the executive board of the Cedars of Lebanon-Mount Sinai Hospitals, a nonprofit, community-sponsored hospital in Los Angeles. Until the development of the new program the facility had served as a custodial and terminal care center with a 91-bed capacity. A review of the inpatient population at the outset of the new program revealed that almost all the patients were afflicted with one or more chronic ailments, but that some were ambulatory and essentially independent while others were bedridden and totally dependent. Between these two extremes were all the conceivable stages of dependency and chronic physical disability. In the absence of a true rehabilitation program all patients were potential long-term, rejected, elderly residents. A few patients had been "hospital residents" for over twenty years. It was against this background of long term, custodial,

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Presented before the Section on Physical Medicine at the 91st Annual Session of the California Medical Association, April 15 to 18, 1962.

*The author wishes to acknowledge and to express his appreciation to Dr. Sidney Soll, associate medical director, Cedars-Sinai Hospital for his interest and guidance in establishing the rehabilitation program, and to Mr. Harold Bilsky, administrator, Mount Sinai Rehabilitation Hospital for his enthusiastic cooperation in the reorganization of the center.

resident care that the hospital administration sought to establish a rehabilitation program. The stated purpose of the program was to introduce the newest methods of rehabilitation medicine in an effort to restore or maintain every disabled person at the optimum level of attainable performance—physically, emotionally, socially and spiritually—so that he or she may return to a useful and meaningful place in society.

A GERIATRIC PROGRAM—ITS DEVELOPMENT

The problems inherent in reorganizing an existent, long-term custodial care facility into a semblance of a modern geriatric rehabilitation center were many. The need for converting patient and staff orientation from a static to a dynamic concept was imperative. The change was required at all levels of operation, inasmuch as a sedentary, nonproductive and little motivated population was about to embark on a program of movement and expanded interpersonal relationships.

As a first step toward improving patient morale and a sense of wellbeing, it was established that all wheel-chair and ambulatory patients must dress in street clothes on arising in the morning. Previously patients had remained in their night-clothes from morning to evening and were also fed in their rooms. The demoralizing effect upon the chronically disabled patient of remaining in night-clothes throughout the day is easily surmised. Simultaneously, the physical plant was being renovated to provide for specific areas—therapeutic, as well as dining, recreational, and social. It was predetermined that all areas should be bright, cheerful, well-equipped and available to the patients throughout the day.

The response to communal eating was at first resisted. Psychologically, the patients in many instances felt ill at ease after months and years of eating in seclusion, or, at best, with one or two other persons in the room. However, the embarrassment of eating in the company of three or four persons at the same table passed, and patients not originally included soon requested permission to eat in the newly established dining room. Once the resistance to group eating had been overcome, integration into social games and other group activities following the noon meal was a relatively simple matter. In keeping with the concept that activity overcomes depression and inertia, scheduled movies, picnics, parties and outings away from the center were organized. The many hospital auxiliaries and their volunteer workers aided in this effort. Once a favorable physical and social setting to bolster patient morale, interest and desire had been established, the stage was set for the heart of the project: medical rehabilitation.

From a medical rehabilitation standpoint every patient was examined both by the staff internist and the physiatrist. Following the examination a reasonable rehabilitation goal was established, and individual programs of physical and occupational therapy were outlined in the presence of the physical and occupational therapist, either at the bedside or in the therapy areas. In outlining the programs the emphasis was placed on functional improvement through muscle strengthening, restoration of joint mobility, and self-care training. The latter included all aspects of dressing, toileting, showering, bathing, feeding and, whenever possible, independent ambulation. Bedside and bathroom activities of daily living were carried out in the patients' rooms and bathrooms, at first by the occupational therapist and subsequently with the aid of previously trained ward personnel under the direct supervision of the therapist. This served to motivate the aids and attendants who had for years been engaged in dull, routine, never-changing daily chores. The favorable impact on the attendant-patient relationship was striking.

Periodically the patient was reevaluated, appropriate changes in therapy were made and goals were reassessed when necessary. Monthly staff conferences were held to review the progress of specific patients and to correlate the gathered information from the medical, administrative, nursing, therapy, social service and dietetic personnel. In this way a total picture of the patient, his problems, his response to therapy, and, ultimately, his placement was secured. Group participation meetings were organized in which the rehabilitation patients and staff personnel, including the nurses and attendants, took part. In this manner mutual problems are discussed and solved.

In the course of the first year of operation 56 patients were admitted to the rehabilitation unit, including 21 custodial patients selected from the existing hospital census at the initiation of the program.

RESULTS

The original group of 21 patients selected for the rehabilitation program ranged in age from 60 years to 82 years. There were 13 with hemiplegia, two with Parkinsonism, and one in each of the following diagnostic categories: fractured hip; rheumatoid arthritis; adult muscular dystrophy; paraplegia; combined asthma and emphysema; and unilateral amputation. From this group of so-called "custodial cases" a total of four patients were discharged (three returned to their homes and one was placed in a rest home). Despite the subsequent return to a custodial status of 11 patients, improvement was evident in 15 of the 21 patients, and five became almost completely independent in self care. Ambulation enough to permit the patient's walking to the dining room was achieved in nine cases (in which previously the patients had been unable or unwilling to walk).

During the first 12 months of operation a total of 35 new patients, 16 women and 19 men, were admitted to the rehabilitation center, most of them in the last six months of 1961. The ages ranged from 59 to 81 years. Eighteen were hemiplegic, four had hip fractures, two collagen disease, and one each of the following: quadriplegia, traumatic hemiplegia, paraplegia, cerebral aneurysm with hemiplegia, asthma and emphysema, osteoarthritis, rheumatoid arthritis, cardiac disease, osteomyelitis with lower extremity weakness, tibial fracture, and above-knee amputation. These patients were immediately placed into a program of treatment with an anticipated and reasonable goal based on the initial evaluation. Of this group, 13 were returned to their homes—seven as partially independent and six as completely independent in self care. Six patients were sent to rest homes as partially independent but in need of continued part-time attendant care. Five patients were reclassified as custodial, and three died at the center. The remainder are being continued in the rehabilitation program. Seventeen of the 35 patients became ambulatory—eight without any form of support, eight with one cane, one with crutches.

Twenty-three patients (41 per cent) were discharged from the rehabilitation center in the one-year period. Considering only the second group of 35 patients, 54 per cent were discharged after three to nine months of intensive rehabilitation. Of the 56 patients treated during the first year, 42 were improved by the program.

The following two cases are typical of the improvement that was brought about.

REPORTS OF CASES

CASE 1. The patient was a 67-year-old man who was admitted as a direct transfer from the local county hospital. On April 27, 1961, he had fallen in the bathroom at a friend's home and struck his head on the bathtub rim and then on the floor. He apparently lost the ability to move his arms and legs but did not lose consciousness. On admission to the county hospital he was observed to be alert and oriented. There was a small laceration over the forehead and mild suboccipital tenderness of the neck. Both upper extremities were decidedly weak, more on the right side than on the left. Strength in both lower extremities was fair, but the right leg was weaker than the left. The rectal sphincter was under good control, but there was disturbed bladder function. Extensive hypalgesia to pin prick and hyperactive deep tendon reflexes were noted. X-ray films of the cervical spine, planograms of the odontoid process and myelographic examination on two occasions elicited no evidence of cervical spine disease. It was assumed that cerebrovascular thrombosis had occurred and the patient showed some improvement in the five weeks he was in hospital before transfer to the Mount Sinai Rehabilitation Hospital. The discharge note indicated that he appeared to improve but could not walk, despite good return of strength in the lower extremities, and could not use his upper extremities in any functional manner.

Upon admission to the center he was observed to be alert and responsive. He was helped to stand at the bedside where he showed a spastic standing posture. He had great difficulty in taking a few assisted steps. The patient had pronounced spasticity and weakness of the upper extremities and he could not use his hands functionally. The lower extremities were moderately spastic but strength and range of motion were fair when the patient was supine. The deep tendon reflexes were hyperactive throughout, and Babinski and Chaddock signs were present on both sides. Clonus was observed in both ankles, the left knee and the left wrist. Sensation was impaired below the level of the fifth thoracic nerve especially to pain and temperature. There was an indwelling Foley catheter. The impression gathered from the history and examination was that the patient had partial quadriparesis as the result of injury to the spinal cord, and that he may have had a cerebrovascular accident, leading to the fall and subsequent cervical trauma.

A program of physical and occupational therapy was begun immediately. In the course of six months the patient graduated from bed to wheel chair to independent ambulation. He developed good use of his right hand and fair use of the left hand (previously injured, with loss of three fingers). At first, spring suspension slings were used to initiate functional movement of the upper extremities and permit occupational therapy activities. As strength returned the patient was able to dispense with these devices and ultimately developed sufficient function to feed, shave, toilet, and partially dress and undress. At the time of discharge to his home he was independently ambulatory on uneven as well as level ground, and, except for inability to dress completely, was independent in self care. Morale and motivation continued at an excellent level throughout.

CASE 2. An 80-year-old man entered Mount Sinai Rehabilitation Hospital on May 3, 1961, with a history of long-standing osteoarthritic involvement of the knees and shoulders. He had received excellent medical care for many years, including several courses of intra-articular steroid therapy. However, he had reached a period of diminishing return and, when no longer able to take care of his needs at home, applied for admission to the rehabilitation hospital.

The patient, who was of pleasant disposition, was able with great effort and obvious pain to take a few steps with a cane. Otherwise he kept to a wheel chair. Both knees were swollen and tender, with the range of motion, both active and passive, very limited and painful. Motion of the left shoulder also was painful and restricted. A review of recent x-ray films showed advanced hypertrophic, degenerative changes of both knee joints.

A program of intensive physical therapy, combined with intra-articular injection of large doses of steroids, was begun. The response was dramatic. In two weeks the patient could walk without aid, tenderness almost completely abated and there was pronounced increase in range of motion of the knee joints. On May 25, 1962, the patient was discharged and thereafter was an outpatient at the Mount Sinai Hospital Clinic. He received therapy twice weekly and occasionally required an intra-articular injection for transitory swelling and pain. He could drive an automobile and was fully ambulatory and independent in self care.

CONCLUSION

The dejected, and often rejected, resigned, disabled, so-called "custodial geriatric patient" who finds himself in a static and sedentary situation has little need for preserving his ego strength. He tends to withdraw and to avoid social contacts even with equally involved patients in his immediate environment. That this is not, in most instances, an irreversible process was demonstrated in our study. The challenge posed by this ever-expanding problem is a double-edged one: On one side is the challenge to the patient upon whom the dynamic forces converge to attempt to overcome the inertia, the depression, the loss of dignity and individual status; and on the other side is the challenge to the community and the rehabilitation staff, from physician to handyman, to provide the physical facilities and the medical acumen and knowledge needed to restore function, confidence and self-respect to the disabled, geriatric patient. Ideally the goal is the prevention of the loss of function, the preservation of human dignity and a sense of identity. Less than ideally, but at present the most practical approach, is the restoration or maintenance of every disabled, elderly person at the optimum level of physical performance, emotional equilibrium and social relationship compatible with his reservoir of potential strength in these areas. As demonstrated in this study, in a significant number of cases the early and vigorous treatment of physical disability in the elderly may make the difference between developing a long-term, custodial patient who is a drain on the community and of little use to himself, and a restored, functioning person who may return to his home and, in some instances, to a contributing status in the community.

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CASE REPORTS

Primary Adenocarcinoma of the Appendix

A Report of Two Cases

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Primary carcinoma of the appendix is a rare entity which seldom is diagnosed clinically before operation. The simplest classification is that proposed by Uihlein and McDonald in 1943:

1. Carcinoid tumors
2. Adenocarcinoma
   (a) Mucinous adenocarcinoma associated with mucocele
   (b) Colonic adenocarcinoma

The appendix is the site of approximately 67 per cent of all carcinoid tumors. According to Uihlein and McDonald, 88 per cent of all carcinomas of the appendix were of the carcinoid type; 8 per cent were papillary cystadenocarcinomas (or mucocele), and 3.5 per cent were adenocarcinoma of the true colonic type. Collins, who studied 50,000 appendices removed surgically or examined postmortem, reported that only 41 primary adenocarcinomas of the appendix were found, an incidence of 0.082 per cent or one in every 1,200 appendices.

Sieracki and Tesluk in 1956 reported eight cases of appendiceal carcinomas observed at the Henry Ford Hospital and Pontiac General Hospital and discussed reports of 42 cases they had collected from the previous literature.

Excellent reviews were made by Braasch and Vansant in 1959 and by Sheridan and Pass in 1960. Both emphasized the rarity of the tumor and the need for proper therapy. For adenocarcinoma of the mucinous type associated with mucocele, without rupture, simple appendectomy should result in cure. In adenocarcinoma of the colonic type, however, hemicolectomy is indicated, since this tumor spreads in a manner similar to that seen in colonic carcinomas and frequently involves lymph nodes.

Mucinous adenocarcinoma is frequently referred to as malignant mucocele. It is more common than colonic adenocarcinoma, is usually local, is frequently encountered as the result of rupture. It spreads not by metastasis but by direct implantation in the peritoneum, causing complications such as intestinal obstruction and sepsis. In most instances tumors of this order are discovered during exploratory laparotomy or operation done on suspicion of acute appendicitis. The prognosis is good provided spread or seeding of the peritoneum has not occurred. Even if spread has begun, fairly long continued life can be expected.

Colonic adenocarcinoma, the rarest type of carcinoma of the appendix, simulates other colonic tumors, especially those of the cecum. This tumor histologically is fairly well differentiated but invades the muscularis. It occurs principally in persons of the older age groups and is rarely diagnosed preoperatively. Frequently it comes to the attention of the patient because of pain simulating that of subacute or acute appendicitis.

REPORTS OF CASES

Case 1. A 63-year-old woman entered the Monterey Hospital because of abdominal pain in the right lower quadrant of ten days' duration. Except for bouts of paroxysmal auricular tachycardia and a mild degree of arteriosclerotic heart disease, the patient had been in good health. The pain in the right lower quadrant of the abdomen was persistent and after five days was complicated by nausea and vomiting. A day later the patient had two to three black bowel movements. Then for the next two days the feces were brown and the patient felt considerably improved. The abdominal pain then returned and increased in intensity.

When asked about bowel movements the patient said she had become somewhat constipated during the preceding month. Her body weight had decreased seven pounds in six months. At no time did she have bright red blood in the stools.

Some five years previously the patient had a vaginal hysterectomy and at that time had had some symptoms referable to the urinary tract. The pathologist reported adenomyosis, endometrial hyperplasia, endometrial polyp and carcinoma in situ of the uterine cervix.

Upon physical examination a very firm tender mass, approximately 6 x 6 cm., was palpated in the right lower quadrant of the abdomen.

Submitted December 21, 1961.

Hemoglobin content was 12 gm. per 100 cc. of blood and leukocytes numbered 10,350 per cu. mm. —73 per cent segmented forms, 22 per cent lymphocytes and 5 per cent mononuclear cells. Results of urinalysis were within normal limits.

X-ray examination with barium administered by enema showed that the cecum was high and fixed in position. The cecum and terminal ileum appeared normal. The appendix did not fill. There was a shadow in the pericecal region below the cecum, considered to be an appendiceal abscess.

The clinical impression before operation was that the three most likely diagnoses were (1) appendiceal abscess; (2) perforating diverticulum of the cecum; (3) perforating carcinoma of the cecum.

At operation a hard, oval mass about 6 cm. in diameter was found attached to the anterior abdominal wall in the right lower quadrant. Freed from the abdominal wall and delivered into the wound, it was observed to be a perforated appendix surrounded by adherent omentum. The omentum was left attached to the mass and a portion of it was removed along with the appendix.

The pathologist's report was as follows: "The specimen consisted of an appendix showing a perforation in the middle third. Microscopically, an invasive tumor infiltrating the muscularis was noted. The cells were arranged in an adenomatous pattern of a rather bizarre nature and there was a decided inflammatory reaction associated with the neoplasm."

The Tumor Board of the hospital advised right hemicolectomy, which was done eight days after the removal of the appendix. At the same time a strip of peritoneum to which the appendix had originally been adherent was removed.

The pathologist reported: "The tissue showed an inflammatory reaction associated with some foreign body response. Many histiocytes were present. Sections of the peritoneum revealed no evidence of any residual tumor and numerous sections of lymph nodes and cecum revealed no tumor present. The cecum was free of any tumor."

Comment

This was a low grade well differentiated colonic adenocarcinoma originating in the appendix with perforation. The fact that the surrounding omental fat and the strip of peritoneal tissue were free of tumor indicates a favorable prognosis.

Case 2. A 69-year-old woman, first seen in the General Medical Clinic at Fort Ord, California, in October of 1959, had been complaining of abdominal pain for approximately a week. The pain at first had been in the upper abdomen and later was confined to the right lower quadrant, where it was thought that a mass could be felt. Pelvic examination was carried out with the patient under general anesthesia and a pear-shaped mass 7 x 2 cm., which could not be definitely separated from the cecum, was palpated.

Fluoroscopic studies with barium showed a questionable filling defect of the cecum. Films taken after fluoroscopy showed that the barium had passed through the ileocecal valve and the irregular defect of the cecum still was present but whether it was caused by an intrinsic or an extrinsic lesion of the colon could not be determined.

Hemoglobin content of the blood was 13.2 gm. per 100 cc. Leukocytes numbered 10,300 per cu. mm. with 68 per cent neutrophils. The urine contained many white blood cells and occasional hyaline casts.

At operation a tumor involving the proximal half of the appendix, adherent to the right fallopian tube but not involving the cecum, was found. Adenocarcinoma was diagnosed by frozen section examination. Right hemicolectomy and resection of the right tube and ovary were carried out. The pathologist reported primary adenocarcinoma of the appendix with no involvement of the cecum or fallopian tube. One regional lymph node showed metastatic disease.

At the time of operation the gallbladder was palpated and found to contain a single calculus. As it was believed that some of the symptoms were associated with this condition, a second operation was carried out approximately four months after the hemicolectomy. Widespread metastasis from the appendiceal carcinoma was noted. Nodules of metastatic tumor were observed in the wound on opening the peritoneum and were also found in the omentum and transverse mesocolon. Involvement extended upward along the right colonic gutter in the retroperitoneal tissues. The liver was free of metastasis.

The immediate postoperative course was uneventful and the patient was discharged home on the fourteenth day. Her condition deteriorated over the ensuing five or six months and on August 29 she was admitted for terminal care because of abdominal pain, nausea, vomiting and a loss of 16 pounds in body weight. She died September 6, approximately ten months after the original operation. Necropsy was not done.

DISCUSSION

It is interesting that in both cases the patients were women in the seventh decade of life. Both had mild leukocytosis. In neither case was the diagnosis established before operation, which corresponds with the experience in most of the other reported cases. The absence of metastatic lesions in the first patient indicated a favorable prognosis; the presence of lymph node invasion in the second indicated the probability of dissemination.

In both patients right hemicolectomy was done, the best procedure for invasive carcinoma extending beyond the mucosa. Adenocarcinoma in situ or carcinoma confined to the mucosa or tip of an adenomatous polyp may be treated safely by simple appendectomy. Carcinoids or mucinous adenocarcinomas associated with mucocele without invasion or spread to adjacent nodes may also be safely treated by appendectomy alone.

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ADDENDUM: After this report was written, the author observed another case of primary carcinoma of the appendix. The patient was a 73-year-old man. He was operated on for regional enteritis and the appendix was removed incidentally. It was a rather short appendix with a diameter of 2.5 cm. It was pale in color, solid in consistency and had no visible lumen. Microscopically, mucinous adenocarcinoma confined to the appendix was observed.

The Spreading of Warts by Metal Expansion Watch Bands

A Report of Three Cases

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THE VIRUS of warts is an inoculable organism. Constant pressure as on weight bearing areas of the feet, recurring nicks in the skin such as are produced by shaving and acute and chronic trauma of other kinds appear to be in some persons the means of inducing and continuing an infestation with warts. In the cases here reported warts developed and spread where a metal expansion watch band repeatedly nicked the skin at the wrist.

CASE 1. A 45-year-old man had warts involving the left wrist and left hand and none elsewhere on the body (Figures 1 and 2). The patient had a nervous habit of pushing his watch band up and down over the wrist. Often when he did this he was aware of a mild stinging pain. In the skin area traversed by the watch band in this up and down and sideways movement there was a solid plaque of wart tissue extending across the extensor surface of the wrist. Trailing distally from this area were numerous discrete warts on the sides of the hand and thumb. It was obviously impractical to attempt removal of the large area of wart on the dorsum of the wrist. It was decided that the only therapeutic measure would be to advise the patient to discontinue the wearing of the watch. Within two months all the warts had disappeared.

CASE 2. A 35-year-old man had warts on the left wrist where the skin was nicked frequently when he slid a metal expansion watch band up and down. He said that when he wore the watch on the right wrist, warts developed there also. When he discontinued wearing the watch, all of the warts on both wrists disappeared spontaneously.

CASE 3. A 50-year-old man had warts scattered over a large area on the extensor surface of the arm from the wrist almost to the elbow. He was in the habit of pushing his watch high up on his arm when he worked. All warts disappeared spontaneously when the wearing of the metal expansion watch band was discontinued.

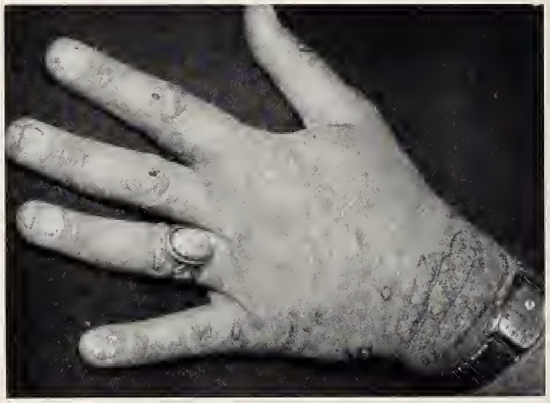

Figure 1.—Watch in position above wrist bones. Note large wart plaque below watch, the linear plaque below it and the discrete warts strung out distally. (All wart tissue has been outlined with ink.)

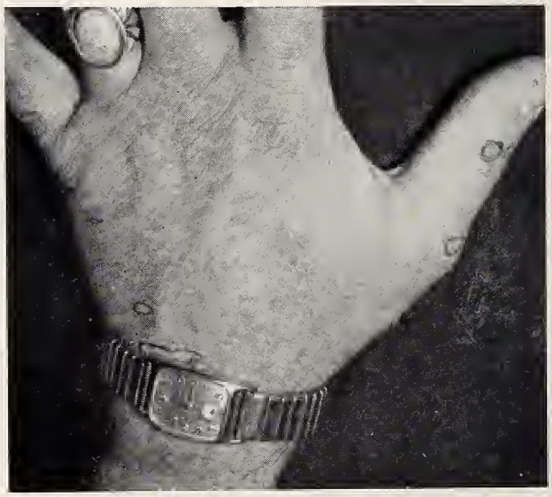

Figure 2.—Watch in position below wrist bones. The watch now covers the larger plaque. Note watch stem resting on smaller, linear plaque. Discrete warts trail away on sides of hand, the areas that are traumatized in removing watch.

COMMENT

In these three cases, appreciation of the role of the expansion metal watch-band in producing minor trauma to the hairy part of the forearm was essential to the desired therapeutic result. It is probable that if the warts had been destroyed in the ordinary way, they would have returned again and again as long as the watch bands were worn.

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Submitted February 26, 1962.

Use of the Artificial Kidney in Snakebite

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AT 1:40 P.M. on October 19, 1959, a 33-year-old Mexican laborer was bitten on the calf of the right leg by a rattlesnake that was later identified as Crotalus rubor rubor, or red diamond rattlesnake.[3] Fifteen minutes later at a nearby hospital the patient was noted to be frothing at the mouth, was tense and irritable and had generalized muscle fasciculation. Oral temperature was 101° F. A single fang mark was present on the right calf. Immediate treatment consisted of 1.500 units of tetanus antitoxin, 75 milligrams of hydrocortisone sodium succinate (Solu-Cortef®), cold compresses to the right calf and 1 vial of Crotalus antivenin, half locally around the bite and half intramuscularly. No incision of the wound was made. The hemoglobin was 15.1 grams per 100 cc. and leukocytes numbered 27,000 per cu. mm. The following morning the oral temperature was 104° F., the pulse rate 170 and blood pressure 120/80 millimeters of mercury. Extensor rigidity suggesting ospisthotonos was present. There were no conjunctival hemorrhages. The pupils were pinpoint and the optical fundi were not visualized. No abnormalities of lymph nodes, heart, lungs or abdomen were noted. The deep tendon reflexes were decreased. Plantar reflexes were within normal limits. There was no localized tenderness, redness or swelling about the site of the bite. In spite of heavy sedation, soft restraints were required for the safety of the patient.

Penicillin was administered and cooling measures carried out and by noon the temperature was 99° F. Hematemesis, hematuria and oliguria had developed, however. A total of 5 vials of antivenin, 1,500 units of tetanus antitoxin and 1,200,000 units of penicillin were given during the first 24 hours. At no time was hypotension observed. In the eight hours from 7 a.m. to 3 p.m. on October 20, 1959, the patient's fluid intake was 4,000 milliliters and urinary output 290 milliliters. He was transferred to the San Diego County General Hospital for further observation and treatment.

On admission palpable right inguinal lymph nodes were present and erythema extended from the site of the bite in a linear fashion up the right calf, but no significant necrosis or swelling at the area of inoculation was present. An electrocardiogram was within normal limits. The urine was brown and strongly positive for albumin and hemolyzed red blood cells. Bleeding and coagulation times were 1 and 3 minutes. Prothrombin time was 96 per cent of normal. The fibrinogen level was 0.5 gram per 100 cc. No significant change occurred in hemoglobin values during the the first 96 hours. Hyperkalemia did not become a problem.

The patient remained oliguric; urine output for each of the succeeding four days was 500 ml., 225 ml., 125 ml. and 80 ml. When symptoms of uremic deterioration developed on the morning of the sixth day, dialysis was carried out for five hours with a disposable twin-coil artificial kidney. Transient systolic hypertension—160 millimeters of mercury—developed at the end of the procedure. The blood urea nitrogen was reduced from 138 mg. to 54 mg. per 100 cc. Oliguria continued and on the tenth hospital day dialysis for five hours was again carried out. As before, transient systolic hypertension developed, this time to 180 mm. of mercury. The blood urea nitrogen, 134 mg. per 100 cc. before dialysis, was 54 mg. after the procedure.

Progressive diuresis occurred and by the 17th hospital day the urine output was 6,000 milliliters per 24 hours. In spite of this, the blood urea nitrogen rose to 166 mg. per 100 cc. Then, with diuresis continuing, the chemical contents of the blood returned to normal limits in the next ten days.

On the 18th hospital day the blood pressure rose to 220/100 mm. of mercury. He had right-sided Jacksonian seizures and pneumothorax developed on the left side. The hypertension responded to intravenous magnesium sulfate and sodium amytal. Aspiration and suction drainage reduced the pneumothorax and recovery was uneventful. The patient was discharged on the 35th hospital day, feeling well. The blood pressure and results of urinalysis were within normal limits.

DISCUSSION

There are an estimated 1,500 cases of venomous snake bite in the United States each year, approximately 70 per cent of them by rattlesnakes. Death occurs in from 1.5 to 3 per cent of cases. Early death from intravenous inoculation of Crotalus venom is usually due to hemolytic shock or hemorrhage, or to central nervous system intoxication. Later, renal failure may become a significant factor.

What are the components of Crotalus venom responsible for the production of renal failure? The important hemolytic principle in Crotalus venom is the enzyme *lecithinase*. This substance converts the lecithin of the red blood cells or plasma to the hemolytic agent *lysolecithin*, which acts by injuring the red blood cell membrane, causing hemolysis. This or a similar substance may also act directly on the vascular endothelium to permit diapedesis of red blood cells into tissue spaces.

Proteases convert prothrombin to thrombin, producing intravascular fibrin clotting and afibrinogenemia. The end result is local tissue necrosis and remote visceral hemorrhage and infarction.

Hyaluronidase, another component in the inoculum, acts as a local venom-spreading factor. (Enzymes which increase muscle excitability and neurotoxins found in Crotalus venom will not be discussed here.) The wide range of clinical manifestations of rattlesnake bite is probably owing to

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Presented before the Section on Urology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

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variation in the relative concentrations of the toxins from one species to the next.

What is the renal lesion produced following rattlesnake bite? Renal lesions produced experimentally in animals by the administration of Crotalus venom vary from slight granular degeneration of the tubular epithelium to extensive exudative and hemorrhagic lesions of the glomerular tufts. The wide variation seen in animals suggests a correlation with the human response.

Amorim and Mello[1] described in detail the pathologic condition of the kidneys in three persons bitten by Crotalus terrificus terrificus. The significant findings were degeneration and desquamation of tubular cells of the ascending limbs of Henle, associated with intense interstitial inflammatory response predominantly in the intermediate zone of the kidney, characterized by neutrophilic leukocytes, edema and histiocyte proliferation. Hemoglobin casts were present in the distal convoluted tubules and collecting tubules. Glomeruli were spared. Proximal tubules showed cloudy swelling. Capillary and precapillary hyperemia was prominent. Grossly, multiple hemorrhagic foci in perirenal and renal tissues were noted. In short, the lesions produced are those of hemoglobinuric nephrosis. Whether these findings can be translated to North American Crotalidae is unknown. The lesion awaits description. Unfortunately renal biopsy was not done in the case reported herein.

Because of the minimal local tissue reaction about the site of the bite and the rapid onset of intense systemic response we believe that the patient received a direct intravenous inoculation of venom. The presence of a single fang mark indicates that the total volume of the inoculum was less than would ordinarily be expected. Having survived the initial impact, the patient's problem became one of severe although reversible renal failure.

If the renal lesion produced by North American Crotalus venom is intermediate tubular necrosis, it is most important that shock be prevented in order to avoid the superimposition of ischemic tubular necrosis upon the already damaged nephron. One wonders whether the judicious use of Mannitol® (a hexahydric alcohol) or other osmotic diuretic in the early phase of treatment might be indicated to support the circulation and maintain flow of urine.

Once renal failure is present, careful support and extracorporeal or intraperitoneal dialysis are indicated if this potentially reversible disease is to be overcome.

SUMMARY

The clinical syndrome of acute renal failure developed following inoculation of venom by a rattlesnake bite, apparently directly into a vein. Careful supportive care alleviated the seriousness of the initial impact and use of the artificial kidney provided the time for renal recovery.

6330 Alvarado Road, San Diego 20 (Carter).

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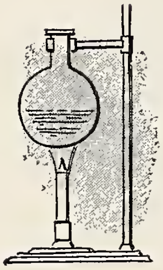

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MEDICINE

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EDITORIAL

Welcome Forty First

THE UNIFICATION of the California Medical Association and the California Osteopathic Association is now a reality. What has been a program and a series of steps for the past two years has now been achieved and the two have become one.

There remains the formality of securing public approval of the ballot proposition to set the future duties of state boards but, regardless of the outcome of that proposition at the polls, the two professions have effectively combined.

Formal steps were taken last month to issue a charter to the Forty First Medical Society as a component unit of the California Medical Association. The society has reported its membership to the C.M.A., has paid the dues of its members and has thus enrolled them as members of the medical fraternity of the state and the nation.

The Forty First Medical Society is statewide in area. It was formed to provide a professional association for those coming anew into the C.M.A., an organization similar to the 40 existing county societies. Its members are those who have now embraced the M.D. degree and have applied for and been elected to membership.

As a component of the California Medical Association, the Forty First has all the rights and privileges of any other medical society in the state. For example, it will have representation on the Council of the Association and in the House of Delegates. In each instance this representation will be based on the society's membership.

From the membership now reported, the Forty First Medical Society will be entitled to two members of the Council. The society has already selected Doctors Joseph Cosentino and Forest J. Grunigen for these posts and the Council has acted to appoint them as members of the Council until the time of the next annual session. At that time the members of the House of Delegates from the Forty First will elect their district councilors as all other districts do.

In the House of Delegates the Forty First Medical Society will be entitled to 40 Delegates and a like number of Alternates. These will be men of their own choice, as is true with all other component societies.

When the California College of Medicine conferred the M.D. degree on a large class of applicants in July, the C.M.A. was pleased to hold a series of orientation meetings at which these points were made plain. The structure of organized medicine was outlined and a discussion of the commissions and committees of the Association, their composition, selection of members and responsibilities was outlined for these potential new members.

Today these new diplomates are members of the C.M.A. and the A.M.A. and it is likely they have a better grasp of the organization and operations of the C.M.A. than do many of the older members. They have the rights and privileges and duties that go with membership in this democratically operated organization.

It is fitting here to express a broad welcome to the 1,900 new members coming into the C.M.A. from the Forty First Medical Society. The same welcome applies to the society as a component unit of the Association and to its officers and governing members who conduct its affairs.

"Yes" on 22

IN A SHORT TIME members of the Association and members of the general public will see evidence that a YES vote is being requested on Proposition 22 on the November ballot: Newspapers, radio stations, television stations, pamphlets, automobile bumper strips, tent cards in physicians' offices will ask and ask again for an affirmative vote.

Proposition 22 was placed on the November general election ballot by action of the State Legislature. Its terms tie in with a series of measures passed by the Legislature and approved by the Governor, all designed to create an orderly unification of the medical and osteopathic professions in the state.

While the unification program has progressed smoothly to date, and while it will remain in effect regardless of the vote on 22, a YES vote on this measure is a must if professional and public confusion are to be eliminated.

This proposition provides that the jurisdiction over those physicians who have now received the M.D. degree and have elected to practice under this discipline shall be transferred to the State Board of Medical Examiners. It further provides that the present Board of Osteopathic Examiners shall have no future right to issue physician-and-surgeon licenses in California by reciprocity or by an initial examination.

The osteopathic board would retain the right to supervise those osteopathic licentiates who have elected to retain the use of the D.O. degree, until such time as the total number of those remaining is decreased to 40. The board would then turn over its final records to the Board of Medical Examiners and go out of business.

This proposition has already been endorsed by both gubernatorial candidates, by both professional associations, by labor and by a large number of civic organizations which have seen the wisdom of maintaining in California only one high standard of medical care. With the endorsements already issued it would appear that there should be no question about getting a YES vote.

On the other hand, there is opposition to this proposal, centering principally in another state where a national organization of osteopaths maintains headquarters. The opposition appears to center its position on the claim of "monopoly." The claim is false; no one is denied access to the kind of medical care he wishes to have and no one is excluded from practice by Proposition 22.

Every physician should know that this ballot proposition is good, is needed for completion of the unification program and is designed to provide the public with whatever is best in medical care. Every physician should work for the passage of this measure and should use his good offices in soliciting votes for it.

Chloramphenicol

Since its introduction in 1948, chloramphenicol has been used clinically with excellent success as a wide-spectrum antibiotic. Annoying side effects such as gastrointestinal intolerance and skin rashes have been virtually absent. However, by 1950 it became evident that it could cause serious and fatal abnormalities in the blood, and the Council on Pharmacy and Chemistry of the American Medical Association in 1954 advised that its use be restricted to the treatment of typhoid fever and other serious infectious diseases caused by chloramphenicol-sensitive microorganisms that are resistant to other antibiotics or to other forms of therapy. Nevertheless, the common use of the drug continued, and fatality sometimes followed. Considering the amount of drug prescribed (net sales in 1959 exceeded $70 million) the incidence of reported aplastic anemia is low.

On the other hand, several recent studies using sensitive hematologic means have indicated that reversible erythroid depression occurs quite frequently in patients receiving chloramphenicol.[2,4] It has been shown that before anemia develops there is a fall in reticulocytes, a rise in serum iron with a decrease in unsaturated iron-binding capacity, a decreased rate of radioiron disappearance from the plasma and a delay in radioiron appearance in new red cells. In the bone marrow, vacuoles appear in the cytoplasm and nuclei of primitive erythroblasts and the number of erythroblasts is decidedly reduced. In one series these changes were found in 16 out of 35 patients whose bone marrow was examined carefully.[4] In each patient blood and marrow reverted to normal after the drug was discontinued. Transient decreases in numbers of white cells and platelets occurred in most of these patients. In another series when chloramphenicol dosage was reduced but not discontinued, serum iron levels returned to normal from previous elevation and bone marrow abnormalities disappeared.[5]

Reversible depression of erythropoiesis following the use of choramphenicol cannot be considered a side reaction; it must be recognized as a pharmacological effect. It is more likely to occur in patients with high levels of chloramphenicol in the blood[1] and in patients with anemia or liver disease. At first it was thought that the nitrobenzene moiety of the chloramphenicol molecule was the cause of the marrow depression. However, when the suspected nitro group was replaced by a methyl sulfone group the incidence of marrow depression actually increased, demonstrating that the nitrobenzene part is not primarily responsible.[3]

This editorial written for California Medicine at the request of the editor.

There has been no consistent pattern in the development of severe, irreversible aplastic anemia. Red cells, white cells and megakaryocytes may all be affected. Neither total dosage nor duration of administration nor frequency of therapeutic periods bears a constant relationship to it. Present evidence suggests that factors in the host are important in the development of these changes. Some patients may be unusually sensitive to the pharmacologic effect of the drug, or there may be variations in their nutritional status or differences in absorption, excretion or enzymatic inactivation of the drug. For example, the use of chloramphenicol is particularly hazardous in the newborn: Vasomotor collapse and death may follow use of this antibiotic. In the newborn there is excessive accumulation of chloramphenicol in the blood, since glucuronide conjugation, a normal elimination pathway for this drug, is defective in the immature liver.

It has been suggested that patients who are receiving chloramphenicol should have frequent reticulocyte counts or serum iron determinations to detect evidence of bone marrow depression early. This recommendation is based on the observation that patients in whom reticulocytopenia, a rise in serum iron and changes in bone marrow erythroblasts developed during chloramphenicol therapy, had spontaneous remission of these changes when the drug was discontinued. There is as yet no clearcut evidence that continued administration of chloramphenicol usually leads to irreversible bone marrow depression, or that early discontinuation is followed invariably by remission. In cases in which chloramphenicol is needed for proper treatment, it actually may be inadvisable to stop giving the drug.

Since the relationship between aplastic anemia and reversible changes in the blood and marrow is as yet unknown and there is no reliable way of predicting the former by examination of the blood, administration of chloramphenicol bears a certain risk. For the time being, it would be advisable to follow the recommendation of the Council on Pharmacy and Chemistry and use the drug only if it is specifically indicated and no other drug can do the job.

RALPH O. WALLERSTEIN, M.D.

2000 Van Ness Avenue
San Francisco

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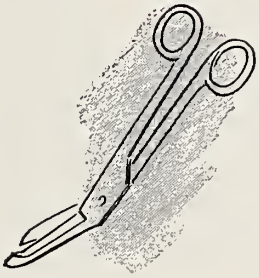

3 NEW DEANS of MEDICAL SCHOOLS in CALIFORNIA

Three of California's six medical schools open their academic sessions this fall under new deans. All will have important parts to play in the training of new physicians at a time when medical practice, medical research and medical education in our state are drawing increasing attention from physicians and others in this country and abroad who have special interest in the advancement of medicine. Each has a reputation of accomplishment that fits him for the job at hand, and all of them can begin this freshman year of their deanship with the well-wishes of their fellow members of the medical profession.

DR. WELLS

Dr. Benjamin B. Wells comes to his post of dean of California's newest medical school with a background of training and experience that eminently recommend him to the duties he undertakes.

The new dean, who assumed the top academic post at California College of Medicine July 1, is a doctor of philosophy as well as of medicine and has held a number of teaching and administrative posts in the 27 years since his graduation from Baylor University College of Medicine. He began his career in medical education as an instructor at Baylor. Following service in the army in World War II he was professor of medicine and dean of the University of Arkansas medical school, then professor of medicine and chairman of the Department of Medicine at Creighton University school of medicine. In 1956 he went to Washington, D. C., as assistant chief medical director for research and education with the Veterans Administration department of medicine and surgery.

Dr. Wells is a fellow of both the American College of Physicians and the College of American Pathologists. He has written two textbooks and numerous journal articles in the field of clinical pathology, and for a year in 1953-54 was a vice-president and senior writer for W. B. Saunders Company, Philadelphia.

Dr. Wells is married, has three children.

DR. HINSHAW

Fifteen years after he was graduated from Loma Linda University School of Medicine, Dr. David B. Hinshaw became the dean of its faculty. He succeeded Dr. Walter E. Macpherson, who was made the university's vice-president for medical affairs.

At the time of his appointment to the deanship, Dr. Hinshaw had been a member of the faculty for some six years, most recently as professor of surgery and chairman of the school's department of surgery.

After his graduation from Loma Linda, in 1947, the new dean spent two years as an army medical officer before beginning five years of residency and specialty training leading to certification by the American Board of Surgery in 1955. He is the author of many scientific articles, particularly in the areas of his special interest—problems of peptic ulcer, gastric surgery and tissue homotransplantation. This research has been supported by substantial grants from the U. S. Public Health Service.

Among the professional organizations of which Dr. Hinshaw is a member are the American College of Surgeons, the Pacific Coast Surgical Association, the Society of University Surgeons, and the Los Angeles County, California, and American Medical Associations.

With his wife and their three children, he lives in Arcadia.

DR. MELLINKOFF

Dr. Sherman M. Mellinkoff, who became dean of the UCLA School of Medicine when Dr. Stafford L. Warren was elevated to the newly created post of vice-chancellor of health sciences at the medical school, brought with him to his new position a record of endorsement by both the faculty and the students. In announcing the appointment, Chancellor Franklin D. Murphy spoke of his "enthusiastic endorsement by members of our medical faculty"; and the classes of 1961 and 1962 voted him "the professor who best exemplifies the teaching art."

The new dean earned his M.D. degree at Stanford University Medical School in 1944. Following two years of service in the Army Medical Corps in Korea, he did his first teaching as instructor in medicine at Johns Hopkins. In 1953 he joined the UCLA faculty as assistant professor of medicine.

A specialist in gastroenterology, he has more than 60 scientific publications in this field.

Dr. Mellinkoff is a fellow of the American College of Physicians and a member of the American Association for the Advancement of Science, the New York Academy of Sciences, American Federation for Clinical Research, American Board of Internal Medicine, American Gastroenterological Association and the American Institute of Nutrition.

He lives in Westwood with his wife June and their three children.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 482nd Meeting of the Council, San Francisco, Thunderbird Inn, July 7, 1962.

The meeting was called to order by Chairman Anderson at the Thunderbird Inn, San Francisco International Airport, on Saturday, July 7, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer and Councilors MacLaggan, Wilson, Todd, Quinn, O'Neill, Bullock, O'Connor, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson and Dozier. Doctor Edgar Wayburn sat with the Council as Editor Pro Tem for Editor Wilbur.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Tobitt, Clark, Edwards and Bowman, Mrs. Griffith and Doctor Batchelder of C.M.A. staff; Mr. Hassard, legal counsel; Mr. Salisbury, Public Health League; county executives Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Geisert of Kern, Baker of Los Angeles, Brayer of Riverside, Dochterman of Sacramento, Burris of San Diego, Neick of San Francisco, Thompson and Monnich of San Joaquin, Wood of San Mateo, Colvin of Santa Clara, Brown of Sonoma, Bailey of Tulare, Rideout of Butte-Glenn, and Grove of Monterey; Doctor Dan Lieberman of the State Department of Mental Hygiene; Doctor Harold M. Erickson of the State Department of Public Health; Doctor Lester McDonald and Mrs. Eunice Evans of the State Department of Social Welfare; Messrs. Heller, Nyron and Wahlberg of California Physicians' Service; Mr. J. E. Bryan, consultant; Doctors Kandlbinder and Hall of the Monterey County Medical Society; Doctors Gerald W. Shaw, T. Eric Reynolds, Harold Kay and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 481st meeting of the Council, held May 19, 1962, were approved.

2. *Membership:*

(a) A report of membership as of July 5, 1962, was presented and ordered filed.

(b) On motion duly made and seconded, 57 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 11 applicants were elected to Associate Membership. These were: Allyn E. Gilbert, Broor A. Johnson, Alameda-Contra Costa; Robert J. Birnkrant, Herman R. Casdorph, Donald W. Gaylor, Doris L. Herman, Barbara M. Korsch, Boyd M. Krout, Stanley R. M. Zerne, Los Angeles County; Paul J. Sanazaro, San Francisco County; Robert K. Harker, Ventura County.

(d) On motion duly made and seconded in each instance, eight members were elected to Retired Membership. These were: Frank S. Baxter, Alameda-Contra Costa; Walter J. Sullivan, Los Angeles County; Edward H. Brunemeier, Orange County; Karl E. Kretzschmar, Riverside County;

OMER W. WHEELER, M.D. . . . . President
SAMUEL R. SHERMAN, M.D. . . . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
IVAN C. HERON, M.D. . . . . Vice-Speaker
CARL E. ANDERSON, M.D. . . Chairman of the Council
BURT L. DAVIS, M.D. . . Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . . . . Secretary
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Paul R. Noetling, San Joaquin County; William Cress, Santa Cruz County; Ervin M. Howarth, Ivan N. Radeff, Ventura County.

(e) On motion duly made and seconded, reductions of dues were voted for 14 members because of illness or postgraduate study.

3. *Committee for Emergency Action:*

President Wheeler reported that the Committee for Emergency Action had discussed the appropriate time for the conference of county society officers and proposed that it be scheduled in conjunction with the clinical session of the A.M.A. in Los Angeles in late November. A motion to follow this schedule was made and seconded but failed to pass.

On motion duly made and seconded, it was voted to hold the Conference of County Society Officers in January, 1963, in conjunction with the Council meeting planned for January 12.

On motion duly made and seconded, it was voted that the committee to arrange this conference should consist of the senior officers of the Association, together with one or two representatives each from the Medical Executives Conference and the officers of the county societies. This committee would prepare a program for the conference for approval by the Council.

Doctor West reported on activities of an advisory committee on medical education created in response to a legislative act. On motion duly made and seconded, it was voted that the Association officers and staff give Doctor West every cooperation and assistance.

4. *Report of the President:*

President Wheeler reported on plans made for the granting of M.D. degrees by the California College of Medicine on July 14 and 15, each conferred group on these two days to attend a welcoming and orientation program following receipt of the degree. He also reported that the Forty First Medical Society, soon to be chartered, would be eligible to two District Councilors and to proportionate representation in the House of Delegates.

Doctor Wheeler further reported on questions which have arisen relative to using the facilities of county hospitals for patients under the Medical Assistance to the Aged program. He suggested that an ad hoc committee be appointed to review the future role of county hospitals in our communities. On motion duly made and seconded, it was voted that such a committee be appointed by the Committee on Committees, to report back to the Council.

Doctor Wheeler also reported that $25,000 has been advanced from special state funds for a pilot study on the provision of health care for migratory workers.

5. *State Department of Public Health:*

Doctor Harold M. Erickson, deputy director of the State Department of Public Health, reported that 21 cases of paralytic poliomyelitis have been reported this year, compared with 42 in the same period of 1961 and 123 in 1960.

Doctor Erickson also reported that the department will now accept Sabin oral vaccine as complying with legal requirements for polio immunization of students and that a period of two weeks following the opening of school will be allowed for the required immunization.

6. *State Department of Mental Hygiene:*

Doctor Dan Lieberman outlined the campaign of the department in recent years to control the growth of new mental hospitals by (1) intensified treatment in hospitals to provide a more rapid turnover, (2) greater use of private facilities for state patients, and (3) use of day hospitals. The day hospitals are now established in San Diego and San Francisco and a third planned for early opening in Los Angeles. These hospitals are estimated to be capable of absorbing a considerable portion of the total patient load.

7. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reported that the Medical Assistance to the Aged program appeared to be progressing satisfactorily from the administrative and financial points of view. There are now about 18,000 patients in the program, of whom some 30 per cent have not previously been recipients of public assistance. About 8,000 of the present patients are in hospitals, the balance in nursing homes and other facilities. The percentage of those applying for M.A.A. and not previously on public assistance is rising each month.

Mrs. Evans also reported on an increase in the Aid to the Totally Disabled program, on progress in a coordinated home care program using "home health aides" as non-medical personnel, and on the increasing return of drug costs by pharmaceutical producers. She also reported that federal funds are now available for the care of patients still under the jurisdiction of mental health authorities.

Doctor Batchelder reported that the Joint Commission for Health Care of the Aged is seeking to establish a training course to determine the most suitable methods for training "home health aides."

8. *Report of President-Elect:*

President-Elect Sherman reported for the Committee on Committees a definition of "clinical investigator," to read:

> An investigator, conducting clinical investigations on the treatment of human cancer, shall be defined as a duly

licensed physician and surgeon or other member of the healings arts who

(a) is actively connected in an official capacity with or is a member of the staff of a bona fide medical school, hospital approved by the Joint Commission on Hospital Accreditation, research institution, or foundation (similar to Rockefeller Foundation or Mayo Clinic) which maintains adequate records for scientific analysis, or,

(b) is approved, by an official state body, such as the Department of Public Health, as qualified to conduct clinical investigations on the treatment of human cancer.

On motion duly made and seconded, this definition was approved.

Doctor Sherman also presented a statement of the functions of the Liaison Committee to the California Medical Assistants' Association, to read: Two fundamental areas are (1) Advisory and (2) Communicative.

Advisory Functions

1. To give counsel or advice, *when asked for it* by a member, an officer, or the Board of Trustees of C.M.A.A.

2. To volunteer assistance or advice in various areas where essentially C.M.A. has had more experience than C.M.A.A. As examples,

(a) A well-rounded diversified, and total concept on program development. This phase would include medical business administration, legislative, public relations, and para-medical topics, such as the MD-DO merger.

(b) Help develop an educational program for further knowledge or a review of important subjects relating to the overall fields of the medical secretary and/or medical assistant. This program may in the future be adopted to needs developed in the proposed certification program carried out on a national level.

(c) To act in an advisory capacity for the education and promotion of encouraging C.M.A. members to have their office secretaries and assistants join the local county medical assistant association and thereby the C.M.A.A. and A.A.M.A.

(d) To formulate and write specific articles, promoting the public relations and overall patient care values derived from employing C.M.A.A. members. These articles would appear in both CALIFORNIA MEDICINE and the C.M.A.A. Bulletin thereby encouraging both doctors and their employees to cooperate more fully in total patient care.

3. To render financial direction and advice in certain areas such as efficient executive office procedures, clerical and secretarial help, publication of the bulletin, conventions, Board of Trustee Meetings, etc., etc.

4. To offer help and advice regarding membership drives, continuing interest, and participation of present members and the formation of new chapters.

The area of attempting to interest C.M.A. members in counties without medical assistants chapters could be an especially important duty of this committee.

5. Let it be stated emphatically that all of these duties specifically note that the committee has an advisory function and that its suggestions will never be mandatory for acceptance by C.M.A.A.

Communicative Functions

1. To keep the C.M.A. Council and C.M.A.A. officers and Board of Trustees informed of matters of mutual benefit and interest.

On motion duly made and seconded, this statement was approved.

9. *California Physicians' Service:*

Councilor Morrison, as Board Chairman of C.P.S., reported that despite increased sales resistance to advanced dues resulting from increased professional fee allowances, the membership was holding at more than 1,000,000 and physician membership at more than 15,000.

Doctor Morrison presented a statement outlining the problems of personnel and cost in a decreasing program as fiscal administrator for public assistance programs. Doctor T. Eric Reynolds, C.P.S. president, elaborated on this problem and asked that the Council adopt a position of supporting C.P.S. in these programs. On motion duly made and seconded, it was voted that the Council reaffirm its position that the administration of governmental medical assistance programs be vested in California Physicians' Service and that the Bureau on Communications develop methods of making this philosophy better known.

10. *American Medical Association Meeting:*

Doctor Doyle gave a review of the recent A.M.A. meeting and reported on the disposition of resolutions introduced by the California delegation.

11. *Finance Committee:*

It was reported that the Committee for Medical Progress had requested approval of its budget and contribution by the Association of its per capita share. The Finance Committee approved this allocation of funds. On motion duly made and seconded, the report of the Finance Committee was approved.

12. *Bureau of Research and Planning:*

Doctor Gerald W. Shaw, chairman of the Bureau of Research and Planning, reported that a study of communications, as represented by *Newsletter*, had been completed. On motion duly made and seconded, it was voted to refer this study to the Bureau on Communications for review and for later action by the Council.

Doctor Shaw also reported on a study on the marketing of medical services, copies of which had been forwarded to members of the Council. On motion duly made and seconded, it was voted to defer action on this report until the next Council meeting in order to allow Councilors more time to study the report.

13. *Commission on Medical Services:*

Doctor Murray reported on the advisability of completing work already started on the application of the 1960 Relative Value Studies. On motion duly made and seconded, approval was voted for this continued study at a cost of about $600, funds for which are included in the present budget. The study, involving the cost of overhead, will be made with the assistance of the Bureau of Research and Planning.

14. *Liaison Committee to Department of Social Welfare:*

Doctor Quinn reported that the Board of Social Welfare has approved some changes in the drug formulary. He also reported that consideration had been given to the question of dispensing of drugs by the attending physician and that the advisory committee had voted that the Board should have discretionary powers in this matter, especially in areas where hardships for the patient might result from a lack of pharmacy facilities. On motion duly made and seconded, Doctor Quinn's report was approved.

15. *Commission on Public Agencies:*

Doctor MacLaggan reported that the ad hoc committee on mass polio immunization programs had held several meetings and that six southern counties would act in concert in a campaign in that area.

Doctor MacLaggan also reported that regional hospital planning committees established by law in the northern and southern areas are considering several alternative proposals and that Doctor Edward Crane and Doctor Albert C. Daniels, medical representatives, have asked suggestions. He presented a suggestion for a policy statement by the Council, to read:

> The Council of the California Medical Association, recognizing the need for sound hospital planning, recommends that such planning can best be accomplished on a voluntary basis and that all approaches short of actual franchising should be given adequate trial prior to resorting to the latter.
>
> The Council further believes that regional hospital planning committees can legitimately be established by law adopted by the Legislature but the charge given these committees by the Legislature should have sufficient flexibility to allow them to operate on a voluntary basis and in the best interest of the local community that they serve.

On motion duly made and seconded, this statement was approved by the Council.

For the Committee on Other Professions, Doctor Miller reported on hearings already held on the question of the pharmaceutical vending machines in hospitals. He reported that further hearings would be held and asked authority for a staff member to attend such hearings. On motion duly made and seconded, authority was voted for a staff representative to audit such hearings.

16. *Commission on Community Health Services:*

Doctor Harold Kay reported that the commission had assigned to the appropriate committees all resolutions referred to it following the 1962 Annual Session. He also gave progress reports on the activities of several committees under the Commission.

17. *Bureau on Communications:*

Doctor Warren Bostick, chairman of the Bureau on Communications, gave a progress report and outlined the functions which the bureau proposes to undertake in cooperation with other commissions of the Association.

18. *Commission on Medical Education:*

Doctor Batchelder presented a request from one scientific section for authority to align itself with other organizations in promoting postgraduate and other functions. On motion duly made and seconded, it was voted to refer this request to the ad hoc committee on the Scientific Board.

19. *Medical Executives Conference:*

Mr. Boyd Thompson, chairman of the Medical Executives Conference, reported on a meeting held the preceding day, at which two actions were voted to be brought before the Council:

(a) It was recommended that the Committee on Blood Banks of the Association, now scheduled to be in its final year of existence, pay close attention to and cooperate in the reorganization of the California Blood Bank System.

(b) A statement relative to the financing of mass oral poliomyelitis immunization campaigns, approved by vote of the Medical Executive Conference, was presented for Council review and action, as follows:

> It is commonly accepted that mass polio immunization programs must involve financial consideration both as to income and expenditures.
>
> The charge for such programs should be established at a rate commensurate with the cost of the operation, and it should be borne in mind that quality of this valuable public service program should not suffer because of insufficient income.
>
> Expenditures of such a program are many and are obviously in direct relationship to the size of the program. These expenditures should be totally covered by the income. In addition to the cost of the vaccine, all other costs bearing directly upon the program should be taken into consideration in the general listing of expenditures. Items such as telephone, cost of personnel, transportation and promotional materials are all acceptable expenditures which should be reimbursable.
>
> If any surplus funds result from these polio programs, the surplus should be dispersed to public interest projects

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to be selected by each individual county society involved. Examples of such projects are scholarship loans, community public service projects, medical research, medical education, etc. It is expected that accountable costs be reimbursable from campaign proceeds but that no monies should be diverted to the general budgets of medical societies for costs other than those directly related to the polio campaigns themselves.

A financial accounting of all income and expenditures, as well as the disposition of any surplus monies, should be a matter of public record.

On motion duly made and seconded, the report of the Medical Executives Conference was approved.

20. *Staff Report:*

Mr. Hassard reported receipt of a request from the Hospital Conference of Northern California for support in seeking funds from the Department of Health, Education and Welfare for hospital studies proposed by the conference. It was pointed out that a similar hospital conference had obtained such funds without Association support. On motion duly made and seconded, it was voted to decline this request but to request that the county societies in the affected areas be requested to lend their cooperation in such studies.

As legal counsel, Mr. Hassard reported that two suits filed against the Association and others in connection with the unification program with osteopaths had been decided in favor of the defendants but that several weeks remain for these cases to be appealed.

21. *Future Meeting Dates:*

The Council agreed that further meetings in 1962 should be held on August 25 in Los Angeles, October 6 in San Francisco, November 3 in Los Angeles and December 15 in San Francisco. Meetings are to start in executive session at 7:30 a.m.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:30 p.m. in memory of Doctor Arthur L. Bloomfield, eminent physician and educator.

Carl E. Anderson, M.D., *Chairman*
Matthew N. Hosmer, M.D., *Secretary*

CORRECTION

In the report of Transactions of the 1962 House of Delegates of the California Medical Association, a part of the proposed Bylaw Amendment No. 4, which appeared on page 115 of the August issue, was incorrectly printed. As adopted by the House, the resolution read:

Resolved: That Chapter VII, Section 1, Subsection (a), Item 2, of the Bylaws be amended to read as follows:

"2. Committee on Health Care of the Aged."

CALIFORNIA MEDICAL ASSOCIATION

1963 annual meeting

Ambassador Hotel, Los Angeles, March 24-27, 1963

announcing: LAST CALL FOR SCIENTIFIC EXHIBITS, MEDICAL MOTION PICTURES, SCIENTIFIC PAPERS

THIS IS YOUR MEETING . . . . PLAN TO PARTICIPATE

Do you have A SCIENTIFIC EXHIBIT? . . . A MEDICAL MOTION PICTURE? . . . Write now to the CMA Committee on Scientific Work, 693 Sutter Street, San Francisco 2, for *application forms* for Scientific Exhibits and Medical Motion Pictures. *Don't wait!* Completed application forms must be in this office this month so that space and time can be allotted.

* * *

do you have A PAPER you'd like to present to your colleagues? . . . Write to the appropriate **Section Secretary** . . . Don't delay . . . Do it today . . . Programs are being planned *now!*

SECRETARIES OF THE SCIENTIFIC SECTIONS

ALLERGY . . . . Walter R. MacLaren, M.D.
696 East Colorado Street, Pasadena 1

ANESTHESIOLOGY . . . . James S. West, M.D.
Box 8914, Los Angeles 8

DERMATOLOGY AND SYPHILOLOGY . . . . . Herbert L. Joseph, M.D.
1516 Napa Street, Vallejo

EAR, NOSE AND THROAT . . William F. Baxter, M.D.
762 Altos Oaks Drive, Los Altos

EYE . . . . James F. Kleckner, M.D.
3731 Stocker Street, Los Angeles 8

GENERAL PRACTICE . . . . Herbert A. Holden, M.D.
383 West Joaquin Avenue, San Leandro

GENERAL SURGERY . . . . . David B. Hinshaw, M.D.
Room 9440, 1200 North State Street, Los Angeles 33

INDUSTRIAL MEDICINE AND SURGERY . . . . Carl E. Nemethi, M.D.
5592 Santa Fe Avenue, Los Angeles 58

INTERNAL MEDICINE . . Harney M. Cordua, Jr., M.D.
2561 First Avenue, San Diego 3

OBSTETRICS AND GYNECOLOGY . . Leon P. Fox, M.D.
303 North 15th Street, San Jose 12

ORTHOPEDICS . . . . . . Edwin G. Bovill, Jr., M.D.
450 Sutter Street, San Francisco 8

PATHOLOGY AND BACTERIOLOGY . . . . . . Richard O. Myers, M.D.
Valley Presbyterian Hospital, 15107 Vanowen Street, Van Nuys

PEDIATRICS . . . . Lawrence E. Reck, M.D.
2950 Sixth Avenue, San Diego 3

PHYSICAL MEDICINE . . . . . . Frances Baker, M.D.
1 Tilton Avenue, San Mateo

PREVENTIVE MEDICINE AND PUBLIC HEALTH . . . . . . Herbert Bauer, M.D.
Yolo County Health Department, P.O. Box 532, Woodland

PSYCHIATRY AND NEUROLOGY . Henry S. Colony, M.D.
411 30th Street, Oakland 9

RADIOLOGY . . . . Walter Gaines, M.D.
120 St. Matthews Avenue, San Mateo

UROLOGY . . . . Henry Badner, M.D.
4911 Van Nuys Boulevard, Van Nuys

In Memoriam

Brown, Walter H., Palo Alto. Died August 6, 1962, in Palo Alto, aged 86, of cerebral thrombosis. Graduate of Jefferson Medical College, Philadelphia, 1906. Licensed in California in 1928. Doctor Brown was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Butler, Fonzie William, Los Angeles. Died July 18, 1962, in Los Angeles, aged 63, of coronary thrombosis. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1926. Licensed in California in 1935. Doctor Butler was a member of the Los Angeles County Medical Association.

✤

Canney, Philip C., San Francisco. Died July 12, 1962, in San Rafael, aged 38. Graduate of Tufts College Medical School, Boston, Massachusetts, 1947. Licensed in California in 1957. Doctor Canney was a member of the San Francisco Medical Society.

✤

Ghrist, Orrie E., Glendale. Died in Glendale, August 5, 1962, of myocardial infarction, aged 67. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1921. Licensed in California in 1921. Dr. Ghrist was a member of the Los Angeles County Medical Association.

✤

Gordon, George O., Long Beach. Died July 18, 1962, in Long Beach, aged 83. Graduate of Lincoln Medical College, Eclectic, Lincoln, Nebraska, 1911. Licensed in California in 1922. Doctor Gordon was a retired member of the Los Angeles Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Gould, Arthur Abraham, Norwalk. Died July 25, 1962, in Norwalk, aged 54, of arteriosclerotic heart disease. Graduate of the University of Toronto Faculty of Medicine, Canada, 1933. Licensed in California in 1934. Doctor Gould was a member of the Los Angeles County Medical Association.

✤

Hebert, Arthur Winfred, Lodi. Died July 30, 1962, in Lodi, aged 75, of heart disease. Graduate of Jefferson Medical College, Philadelphia, 1916. Licensed in California in 1922. Doctor Hebert was a member of the San Joaquin County Medical Society.

✤

Jackson, John Ernest, Los Angeles. Died July 30, 1962, in Los Angeles, aged 73, of hemorrhage from the cecum. Graduate of the University of Nebraska College of Medicine, Omaha, 1923. Licensed in California in 1926. Doctor Jackson was a member of the Los Angeles County Medical Association.

✤

Johnson, Donald W., Needles. Died July 22, 1962, in an airplane crash in Torrance, aged 64. Graduate of Rush Medical College, Chicago, 1923. Licensed in California in 1947. Doctor Johnson was a member of the San Bernardino County Medical Society.

Johnson, Weston P., Inglewood. Died July 23, 1962, in Long Beach, aged 41. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1951. Licensed in California in 1951. Doctor Johnson was a member of the Los Angeles County Medical Association.

✤

Leachman, Ream S., Vallejo. Died July 7, 1962, in Vallejo, aged 85. Graduate of Cooper Medical College, San Francisco, 1912. Licensed in California in 1912. Doctor Leachman was a member of the Solano County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✤

Lewis, Harvey Alvin, Beverly Hills. Died July 21, 1962, in Los Angeles, aged 50, of ventricular arrhythmia. Graduate of the University of Southern California School of Medicine, Los Angeles, 1938. Licensed in California in 1938. Doctor Lewis was a member of the Los Angeles County Medical Association.

✤

Lorch, Alvin H., San Diego. Died July 23, 1962, in San Diego, aged 56. Graduate of the State University of Iowa College of Medicine, Iowa City, 1933. Licensed in California in 1939. Doctor Lorch was a member of the San Diego County Medical Society.

✤

Mahlmann, Carl, Riverside. Died in 1962, aged 63. Graduate of Hamburgische Universität Medizinische Fakultät, Hamburg, Germany, 1923. Licensed in California in 1945. Doctor Mahlmann was an associate member of the Riverside County Medical Association.

✤

Marsden, Samuel Arthur, Santa Ana. Died November 22, 1961, aged 76, of coronary thrombosis. Graduate of College of Physicians and Surgeons, Los Angeles, 1917. Licensed in California in 1917. Doctor Marsden was a retired member of the Orange County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Nisbet, Thomas W., Corona Del Mar. Died July 17, 1962, in Newport Beach, aged 70, of pulmonary emphysema. Graduate of Emory University School of Medicine, Atlanta, Georgia, 1914. Licensed in California in 1924. Doctor Nisbet was a member of the Los Angeles County Medical Association.

✤

Tobias, Siegfried Fritz, Grass Valley. Died June 29, 1962, in Honolulu, aged 74, of heart disease. Graduate of the Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1910. Licensed in California in 1937. Doctor Tobias was a member of the Placer-Nevada County Medical Society.

✤

Westphal, Glenn Albert, Elsinore. Died July 10, 1962, aged 64. Graduate of the College of Medical Evangelists School of Medicine, Loma Linda-Los Angeles, 1932. Licensed in California in 1932. Doctor Westphal was a member of the Riverside County Medical Association.

Arthur L. Bloomfield
1888-1962

Dr. Arthur L. Bloomfield was a dominant figure in the history of medicine in California. For most of the 28 years he was Professor of Medicine and Executive of the Department of Medicine at the Stanford Medical School, he was the leading intellectual figure in internal medicine in the West. A superb and beloved teacher, an extraordinarily wise physician and consultant, he had an amazing sense and feel of the needs of students, of residents, of patients, of physicians and of people. He contributed greatly to the advancement of medicine, particularly knowledge of infectious diseases, and was a pioneer in the clinical use of pencillin and other antibiotics. California medicine is much richer for the life and contributions of this remarkable teacher, able scholar, investigator and physician.

DWIGHT L. WILBUR

DR. ARTHUR L. BLOOMFIELD, outstanding Professor of Medicine, Emeritus, of Stanford University School of Medicine, died in his home, of coronary thrombosis, at the age of 74 on July 5, 1962.

An only son of the Professor of Comparative Philology at Johns Hopkins University, Dr. Bloomfield was born in Baltimore on May 30, 1888. His early education at Boys' Latin School was an indication of what was to become his total immersion in the academic life. He received the A.B. degree from Johns Hopkins in 1907, the M.D. from its medical school in 1911 just a few years after William Osler departed and during Abraham Flexner's critical study of medical education. Eleven years of a superior learning experience elapsed at Johns Hopkins Hospital before Dr. Bloomfield emerged as Associate Professor of Medicine, and from that post he came to Stanford as Professor of Medicine and Executive of the Department of Medicine in 1926 upon the death of Professor A. W. Hewlett. After his retirement in 1954, he served as Consultant in Medicine at Fort Miley, the San Francisco Veterans Administration Hospital.

His contributions to medical science were manifold. An early interest in influenza, from the 1918 epidemic, directed him toward long-continued studies in infectious diseases. In this field he became a consultant to the Secretary of War, was selected by the government as a pioneer expert in this country on penicillin, and was one of the first to use this agent in the cure of patients with bacterial endocarditis, a previously fatal disease. He also studied influenza and the common cold.

Another chief, continuing interest had to do with peptic ulcer of the stomach and duodenum; he wrote repeatedly on the cause of pain in this disorder, and with Dr. W. S. Polland published a monograph on gastric secretion.

Important as were his scientific investigations, he will be remembered by many primarily for his extraordinary abilities as a physician and as a teacher of medicine. One of the earliest and greatest diagnosticians in the West, he had an almost uncanny way of coming to the heart of a patient's problems even in the most complex situations, while ignoring unimportant aspects which he recognized as "peripheral." The patient's welfare and comfort were of great concern to him; his goal was not merely to make a diagnosis but to use his knowledge in a practical way in order to help the patient, in relieving symptoms and prolonging useful and happy life in the best traditions of medicine. In the most sincere recognition of his clinical success, innumerable physicians selected Dr. Bloomfield as consultant for themselves or for members of their families.

His best teaching, and it was superb, came at the bedside, where it was a memorable privilege and real pleasure to observe Dr. Bloomfield intent at his daily work. Small groups of students, interns and resident physicians accompanied him on punctual and regular rounds in the medical wards. Weekly he demonstrated a few selected patients before a group of his colleagues and practicing physicians. Drawn by his profound knowledge of medicine and by his free use of quotations to the point from anyone from O. Henry to Shakespeare, this group became one of the largest of such exercises in San Francisco or the Pacific Coast. In more formal classroom exercises, few, if any, could equal Dr. Bloomfield's ability to prepare his material with deep logic and present it with interest and authority. He enjoyed open and friendly discussions with his colleagues, and often agreed to disagree with them for the sake of listening students.

A perpetual scholar himself, he took care to provide his students with glimpses of relevant historical background as he discussed current clinical problems. Fortunately, some of this aspect of his work remains in the form of *A Bibliography of Internal Medicine,* in two volumes prepared largely after Dr. Bloomfield's retirement from active teaching. "Here," Professor William Bean wrote in the glowing tribute of his book review, "is an example of the scholarship, interest, and kind of charm and excitement which can be found in medical history when illuminated by the hand of a scholar, especially when that hand is guided and restrained by the mature expertness of an outstanding clinician."

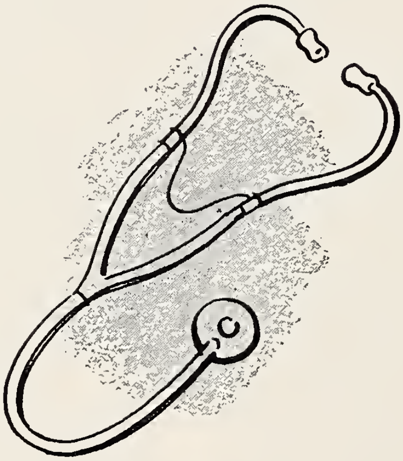
Dr. Bloomfield's interest in medical bibliography was but a part of his love for books in general. He had a fine library of first and rare editions, and was a member of the California Book Club, of the Organization of Bibliophiles and of the Roxburghe Club; he was "Master of the Press" of the latter in 1961. He was director of the splendid historical collection of Stanford's Lane Medical Library, and through his efforts gifts of more than $50,000 came to the Library for the preservation and binding of rare and valuable books and periodicals.

Although few had less interest than he did in medical politics, Dr. Bloomfield's stature was such that he became president of the American Society for Clinical Investigation, the California Academy of Medicine, and the Pacific Interurban Club. He was chosen as physician-in-chief pro tem at the Peter Bent Brigham Hospital of Boston in 1951, was selected in 1952 as one of the few to deliver Georgetown University's Kober Lecture, and received the honorary degree of Doctor of Science from the University of Southern California in 1953. He was a Master of the American College of Physicians, and also was a member of the Association of American Physicians, the Society for Experimental Biology and Medicine, the American Society for Pharmacology and Experimental Therapeutics, the American Society for Experimental Pathology, and for a time was chairman of the Section of Medicine of the American Medical Association. He was a member of Phi Beta Kappa, Sigma Xi, and Alpha Omega Alpha honorary societies, and was on the editorial boards of the *Archives of Internal Medicine*, the *American Journal of Medicine*, and the *Journal of Chronic Diseases*.

He was honored at Stanford by an annual birthday party given by the medical interns and residents for "The Professor," by an "Arthur L. Bloomfield Day" sponsored by the medical alumni upon his retirement, by a *festschrift* number of their Stanford Medical Bulletin dedicated to him a few months later, and by the establishment of the Arthur L. Bloomfield Professorship of Medicine.

Dr. Bloomfield is survived by his wife, Julia Mayer Bloomfield, and three children: Julia Bloomfield, Anne Bloomfield Saltonstall, and Arthur John Bloomfield. Six grandchildren also survive.

ALVIN J. COX
ERNEST R. HILGARD
DAVID A. RYTAND



No. 11*

Acute Radiation Exposure

RADIATION IS UNUSUAL in that it is neither seen nor felt at the time of exposure. Therefore, an individual can only voice *a supposition that he has been exposed.*

Most physicians lack the technical equipment and knowledge to measure radiation, and therefore must request this help from other sources.

It is usually possible to reconstruct the circumstances as they were at the time exposure is supposed to have occurred, and thereby *determine if there was exposure and, if so, in what quantity. To be effective, this investigation should be carried out promptly,* while all facts involved are fresh and undistorted by lapse of time.

Proper procedure answers (1) was there exposure, and (2) what was the *amount of exposure.* Obviously if no significant exposure occurred, the matter can be dropped from consideration.

Knowing the amount of exposure determines:

(a) Whether any active treatment is required other than observation and reassurrance (which in low dose cases is all that is needed);

(b) The prognosis as to probable course of the patient, and the ultimate residual effects to be anticipated;

(c) Corrective steps to be taken to prevent such exposures.

In most instances, with only the patient's history, there is not sufficient basis for a positive medical diagnosis of "radiation exposure."

Due to increasing use of radiation sources, by industries and physicians, one can anticipate *an increasing number of persons believing they have suffered exposure.*

It is detrimental to the individual to be treated on the basis of an inaccurate diagnosis.

Proper medical procedure in the event of such a problem should be:

(a) Based on patient's history, make *initial diagnosis only of "Suspected Radiation Exposure."*

(b) Request assistance from the local Health Department to determine *if exposure occurred, quantity of exposure,* and what type of radiation exposure.

(c) *When the facts are established,* render, if possible, a positive diagnosis of "no exposure" or "proven radiation exposure" and quantity.

(d) *Guided by quantity of exposure,* carry out indicated treatment.

(e) *Institute preventive measures to avoid subsequent injuries.*

Physicians need to recognize the *necessity of promptly requesting available sources of technical knowledge to assist them* in this situation.

As in other fields, *inaccurate diagnosis leads to increased litigation, which is detrimental to the patient* as well as others.

The over-all problem of proper handling of radiation sources is of interest to state government, particularly to the Division of Industrial Safety, which is responsible for safety in the use of radiation sources, and to the State Department of Public Health, which has a strong interest in this area. They should be notified of any incidents involving known or suspected over-exposures to radiation that might result in personal injury. In cases where neither the counsel of health physicists or specialized medical assistance is immediately available, these departments of state government may know where this kind of assistance may be obtained.

COMMITTEE OF OCCUPATIONAL HEALTH
CALIFORNIA MEDICAL ASSOCIATION

Comments and Questions Are Welcomed by the Committee

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* This is the eleventh of a series of articles prepared by the Committee on Occupational Health.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

TODAY'S JET AIRLINER has been pointed out so often as a potential hazard in the spread of disease between countries that one tends to forget that ocean-going vessels are quite capable of doing the same thing in a slower manner.

Two recent occurrences of paratyphoid fever aboard freighters coming here from Europe were investigated by the quarantine stations and local health departments of three California ports.

In the first case, a galley food handler was apparently the carrier responsible for transmitting paratyphoid fever to six other crew members, four of whom had to be put in hospital. In the second case, a freighter had to leave 11 crewmen along the way, but by the time the ship arrived in California the epidemic had burned itself out. None of the passengers aboard either ship were involved and the disease did not spread ashore at the ports visited.

Ships have played an important role in the pandemics of plague and cholera and in spite of all required precautions can still serve to bring communicable diseases of all kinds to our shores.

* * *

There was some decrease in the death rate for some selected cardiovascular diseases in California from 1950 to 1960.

Data compiled by the Bureau of Vital Statistics and Data Processing reveal that the death rate due to diseases of the heart for the total population in California has decreased about 10 per cent during that period. This decrease of 10 per cent is also evident among the female population.

The decrease is in all ages and particularly in the age groups 45 to 54 and 55 to 64. For coronary heart disease the age specific death rate also showed a decreasing trend between 1950 and 1960—about 15 per cent between the beginning and the end of the decade.

* * *

A study of the transmissibility of rabies from insectivorous bats to terrestrial animals is being carried out at the Southwest Rabies Investigation Station of the U. S. Public Health Service at Las Cruces, New Mexico.

Of particular significance is the recent work of the station in demonstrating the natural aerosol transmission of rabies in bats to coyotes and foxes in Texas caves.

The work demonstrates the probable route of transmission for the human case of rabies which occurred in a California mining engineer who died of the disease in Los Angeles in June 1959. The work likewise opens up new avenues of investigation to determine routes of rabies virus excretion and infection among freetail bats—that is, kidney to lung, lung to lung, and mammary gland to alimentary tract—and provides a rationale for the high rate of infection which has been observed in Mexican colonial freetail bats in the Southwestern United States.

* * *

California has experienced its first recorded cases of shellfish intoxication from consumption of oysters. Four Solano County residents became ill after eating oysters on August 1. They experienced tingling of the lips, numbness of the extremities, muscle incoordination and difficulty in walking.

The oysters were purchased in a restaurant near Tomales Bay which obtained them from a commercial bed in Drakes Bay. Samples of the oysters purchased showed 1,920 micrograms of toxin per 100 grams of meat, or 24 times the upper safe limit. Shipments for the present were immediately prohibited from the Drakes Bay bed and all recent distributions recalled by the operators.

Shellfish poisoning results from ingestion by shellfish of the dinoflagellate, Gonyaulaux catanella, a microscopic unicellular plankton organism responsible for the so-called "red tide." At times when millions per liter are present, the sea has a deep rust red color and beautiful luminescence. California's past intoxications have been with mussels and clams, but oysters were involved in human poisoning in British Columbia in 1957.

The first known outbreak on the Pacific Coast was in 1790 when the Russian Baranoff expedition lost some 100 men from what they called "mussell poisoning" in Sitka, Alaska. In 1793, Captain Vancouver's exploring party experienced difficulty with similar poisoning near the island which bears the explorer's name.

From 1927-1959, California had 373 cases with 30 deaths. Of these, 20 cases and five deaths were from clams, the rest followed the eating of mussels. All cases occurred between May 15 and October 26. Each year the department issues a quarantine order prohibiting the taking, sale or offering of mussels from May 1 to October 31, and a warning not to eat the dark portions of clams during that period.

INFORMATION

Type of Practice of Physicians in Non-Federal Practice in California for Three Periods: Mid-1959 to January, 1962; and Other Comparative Data

A Report of the Bureau of Research and Planning, California Medical Association

The total number of non-federal* physicians in California rose from 23,065 in mid-1959 to 26,271 in January, 1962, an 11.3 per cent increase. The proportion of physicians in private active practice remained almost constant during this period.

A significant rise, both in number and proportionally, took place in the full-time specialty category, offset by losses in the general practice-part-time specialty group. While specialists increased by over 30 per cent, general practitioners, who made up 31.7 per cent of all non-federal physicians in 1959, were only 24.7 per cent of the total in early 1962.

Detailed data to be published by the Bureau of Research and Planning in the near future on one phase of its study of the characteristics of physicians provide the bases for a comparison of the numbers of non-federal* physicians in California between June, 1959, and January, 1962. The change in the patterns in California in that two and a half year period is presented in Table 1.

The number of physicians in non-federal practice increased by 2,666 between June, 1959, and January, 1962.

Although the proportion of physicians in private practice to other physicians remains the same, full-time specialists increased about 31 per cent, and general practitioners decreased by 13 per cent.

All other types of practice increased, with physicians in teaching, administration, research, etc., showing the greatest gain of all groups—over 42 per cent.

Table 2 compares the proportion of physicians in non-federal practice in California with corresponding data for the United States as of the beginning of 1962. The most significant differences in the distribution are those which show California's higher proportion of full-time specialists and its correspondingly lower proportion of general practitioners than for the country as a whole. Noteworthy also is the higher proportion in California of physicians who are retired or otherwise not engaged in medical practice.

California Medical Association, 693 Sutter Street, San Francisco 2.

TABLE 2.—*Distribution of Non-Federal Physicians, by Type of Practice for California and the United States, January, 1962*§

	California Per Cent	Total United States Per Cent	United States (Excluding California) Per Cent
Full-time specialty	47.7	42.2	41.6
General practice	24.7	29.9	30.5
Hospital services	15.4	17.9	18.2
All other	4.6	4.8	4.8
Retired and not in practice	7.6	5.2	4.9
Total	100.0 (26,271)	100.0 (237,763)	100.0 (211,492)

§*Sources:* 1959 Data—Health Manpower Source Book, U. S. Dept. of HEW. 1961 Data—Bureau of Research and Planning, Tabulations of IBM cards from the AMA. 1962 Data—*Distribution of Physicians* for January, 1962, Department of Circulation and Records, AMA.

TABLE 1.—*Changes in Type of Practice of Non-Federal Physicians. June, 1959 to January, 1962, in California*§

Type of Practice	Total Physicians by Type of Practice						Per Cent Change June, 1959-January, 1962
	June, 1959		April, 1961		January, 1962		
	No.	Per Cent	No.	Per Cent	No.	Per Cent	
General practice*	7,482	31.7	6,705	26.4	6,483	24.7	−13.4
Full-time specialty	9,587	40.6	11,859	46.6	12,519	47.7	+30.6
All hospital services†	3,885	16.5	3,994	15.7	4,058	15.4	+ 4.5
Other‡	856	3.6	946	3.7	1,216	4.6	+42.5
Retired and not in practice	1,795	7.6	1,936	7.6	1,995	7.6	+11.1
Total	23,605	100.0	25,440	100.0	26,271	100.0	+11.3

*Includes General Practice and Part-Time Specialty.

†Includes Interns, Residents, and Full-Time Hospital Staff.

‡Includes Medical School Faculty, Medical Administration, Research, and Non-Federal Public Health, Dentists, and Industrial and Insurance Company Physicians.

§*Sources:* 1959 data—Health Manpower Source Book, U. S. Dept. of HEW. 1961 Data—Bureau of Research and Planning, Tabulations of IBM cards from the AMA. 1962 Data—*Distribution of Physicians* for January, 1962, Department of Circulation and Records, AMA.

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*Not regularly employed in any of the agencies of the Federal Government.

WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

The Importance of Auxiliary Membership

WHY, IF YOUR WIFE is a member of the Junior League, the Assistance League, the Hospital Guild or other organizations, does she *expect* to give a certain number of hours of her time each week or month in "service" for that organization and the community, but she may not necessarily think it essential to give equal time to her county medical auxiliary?

Our auxiliaries have a worthy goal, worthy projects. We want to help keep medicine unfettered. We work to promote public health. Attendance at our meetings should be just as important to your wife as her "service" time is to other organizations.

From National Auxiliary to State Auxiliary to County Auxiliary an effort is under way in programming to give our members useful information about the worthwhile committees functioning in the auxiliary that could use their time and talents.

Although legislation will continue to be in first place in activity, A.M.P.A.C. will be able to present programs to arouse fresh interest in the need for our participation in combatting any threat to our freedom.

Quackery in all its forms will be exposed by programs. This is again big business. We have an obligation to inform our communities on quackery—in diet, nutrition, cosmetics, cancer, arthritis, etc. Programs to make our members aware of the existence of quackery will allow them to alert their friends and neighbors to the dangers.

Safety, especially in the home, will be brought to the attention of our members by programs. So many hidden dangers can be exposed, and in an interesting manner. This program is presented in conjunction with the National Safety Council.

The new International Health Committee will wish to present programs to outline their projects which will arouse enthusiasm in many communities. The collection of items for use overseas in underprivileged areas has always been supported by the doctors' wives, but never has the collection been better organized.

The program committee in presenting the activities of all the projects of the auxiliary is able through programs to interest all of the members in the true value of auxiliary. How better can a member use her time than to donate a part of it each week or month to one of the many committees earnestly endeavoring to give to America the best health and medicine in the world.

MRS. LYLE F. MURPHY
Second Vice-President and
Program Chairman
Woman's Auxiliary to the
California Medical Association

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

The fifteenth annual **Midwinter Radiological Conference,** sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel, Los Angeles, on February 2 and 3.

Guest speakers will be Dr. Ingomar Wickbom, Goteberg, Sweden; Dr. Robert E. Steiner, Hammersmith Hospital, London; Dr. Walter T. Murphy, Roswell Park Memorial Institute, Buffalo; and Dr. John A. Campbell, Indiana University Medical Center, Indianapolis.

* * *

Dr. Irving Gordon, professor and head of the department of medical microbiology at the University of Southern California School of Medicine, has been made a member of the Training Grant Committee of the Institute of Allergy and Infectious Diseases of the National Institutes of Health.

* * *

Dr. Marco R. Rago of Beverly Hills has been appointed to the State Board of Public Health by Governor Edmund Brown. He succeeds **Dr. Dave F. Dozier** of Sacramento who completed six years of service on the board.

Dr. Charles E. Smith, dean of the School of Public Health at the University of California, Berkeley, who was first appointed to the board in 1940, was reappointed.

* * *

Dr. Clinton H. Thienes has retired as director of the Institute of Medical Research of the Huntington Memorial Hospital, but will continue his association with the Institute as Consultant. Dr. Thienes is also Adjunct Professor of Pharmacology at the University of Southern California School of Medicine.

* * *

A research fellowship in clinical cardiovascular physiology is available in the Department of Medicine at the University of Southern California School of Medicine. The appointment is to be for one to two years. Emphasis is on physiological investigations in patients for study of hemodynamic mechanisms of shock and other cardiovascular diseases. Applicants must be licensed or eligible for medical licensure in California.

Further information may be obtained from Max H. Weil, M.D., assistant professor of medicine, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33.

* * *

The thirty-second annual midwinter clinical convention of the **Research Study Club of Los Angeles** for ophthalmologists and otolaryngologists will be held at The Statler Hilton Hotel, from January 21st through the 25th, 1963, at the Statler Hilton Hotel in Los Angeles.

SAN FRANCISCO

The 1962 scientific assembly of the **California Academy of General Practice** will be held in San Francisco, October 21 to 24. All sessions will be held at the Masonic Memorial Temple on Nob Hill. **Out of state lecturers** will include Dr. C. Harden Branch, professor of psychiatry, University of Utah; Dr. James L. Dennis, professor of pediatrics, University of Arkansas; Dr. William Dock, professor of medicine, State University of New York; Dr. Perry S. MacNeal, associate professor of clinical medicine, University of Pennsylvania; Dr. George Pack, neoplastic surgeon, Memorial Hospital for Cancer, New York; and Dr. Walter J. Reich, professor of gynecology, Cook County Graduate School, Chicago.

GENERAL

The Fourth Regional Rural Health Conference sponsored by the American Medical Association Council on Rural Health, will be held in Sacramento October 19 and 20, 1962. Representatives from Idaho, Nevada, Arizona, Washington and Oregon will be guests of the California Medical Association Committee on Rural Health.

The state committees will be augmented by A.M.A. regional councilors Dr. Herbert E. Mason, of Beaverton, Oregon, and Dr. Carroll B. Andrews, of Sonoma, California.

C.M.A. President Omer W. Wheeler will open the meeting with greetings from the California association.

Dr. Dave F. Dozier, a former member of the State Board of Public Health and a C.M.A. Councillor, will moderate a panel on "Safeguarding the Health of Rural People." The panel will consist of:

Seasonal Worker Health Problems—Bruce Joseph, M.D., consultant California Department of Public Health, Berkeley.

Rural Hospital Problems—Mrs. Dagmar D. Fulton, Pleasanton.

The Doctor's Responsibility—Joseph E. Fischnaller, M.D., Omak, Washington.

Family Responsibility—Mrs. Leopold J. Snyder, Fresno, Regional Chairman for Rural Health, Woman's Auxiliary to the American Medical Association.

Animal Diseases Dangerous to Man—Dr. W. R. Pritchard, dean of the University of California School of Veterinary Medicine.

Poison Dangers—Dr. Virgil Haven Freed, Oregon State College, Corvallis.

A banquet the evening of October 19 will be addressed by Louis A. Rozzini, president of the California Farm Bureau Federation.

The meeting on the second day will be concerned with needs for personnel recruitment and planning for **future developments in rural medical care.** The discussants will be Alfred M. Popma, M.D., member of the Western Interstate Commission for Higher Education, Boise, Idaho; Robert M. Crede, M.D., assistant dean, University of California Medical Center, San Francisco; Henry Gibbons, III, M.D., delegate, American Medical Association, San Francisco; Carroll B. Andrews, M.D., member of the Council on Rural Health, A.M.A., Sonoma, California; C. M. Love, Ph.D., department of life science, Sacramento State College, Sacramento; Herbert L. Hartley, M.D., editor, Northwest Medicine, Seattle.

* * *

The appointment of 13 medical scientists to the **Commission on Drug Safety** was announced recently by Commission Chairman Lowell T. Coggeshall, M.D., vice-president and professor of medicine at the University of Chicago.

The members of the Commission are:

Dr. Paul R. Cannon, pathologist, former chairman of the department of pathology at the University of Chicago, and professor of pathology at the university for 25 years. He is editor of the American Medical Association's *Archives of Pathology.*

Dr. Thomas Francis, Jr., professor of epidemiology and chairman of the department of epidemiology at the University of Michigan Medical School since 1941.

Dr. Philip S. Hench, Nobel prize winning authority on arthritis and rheumatism. He has been associated with the Mayo Foundation and graduate school of the University of Minnesota since 1921, as professor of medicine there since 1947.

Dr. Hugh H. Hussey, Jr., dean and professor of medicine at the Georgetown University School of Medicine in Washington, D. C. He is a specialist in internal medicine.

Dr. Chester S. Keefer, former special assistant to the Secretary of Health, Education, and Welfare and a director of Boston University-Massachusetts Memorial Hospitals' Medical Center since 1959. He has been professor of medicine at Boston University since 1940.

Dr. Theodore G. Klumpp, former chief of the drug division, Food and Drug Administration, and instructor in internal medicine at Yale. He is president and director of Winthrop Laboratories of New York City.

Dr. John T. Litchfield, specialist in pharmacology and drug safety evaluation, and director of the experimental therapeutics research section of Lederle Laboratories, Pearl River, N. Y.

Dr. Maurice R. Nance, an internist with special training in pathology. He is medical director of Smith, Kline and French Laboratories in Philadelphia.

Dr. Leonard A. Scheele, former career officer with the U. S. Public Health Service and Surgeon General from 1948 to 1956. He is senior vice-president of Warner-Lambert Pharmaceutical Company of Morris Plains, N. J.

Dr. Leon H. Schmit, pharmacologist, research professor in biological chemistry at the University of Cincinnati College of Medicine since 1950, and consultant to the National Institutes of Health.

Dr. Austin Smith, former editor of the *Journal of the American Medical Association*, editor-in-chief of all A.M.A. scientific publications, and executive editor of the *World Medical Journal*. He is president of the Pharmaceutical Manufacturers Association.

Dr. Thomas B. Turner, microbiologist, dean of the medical faculty of Johns Hopkins School of Medicine since 1957, an authority on spirochetal diseases and poliomyelitis.

Dr. Josef Warkany, pediatrician, noted for his research in endocrinology and prenatal deformities. He is a fellow of the Children's Hospital Research Foundation in Cincinnati.

* * *

More effective controls of medical quackery in California will be sought in San Francisco on October 10 when representatives of five groups in the health field meet for the **California Congress on Medical Quackery.**

The one-day program, at the Del Webb Townehouse, is sponsored by the California Medical Association in cooperation with the Arthritis and Rheumatism Foundation, the American Cancer Society, the Food and Drug Administration and the California State Department of Public Health.

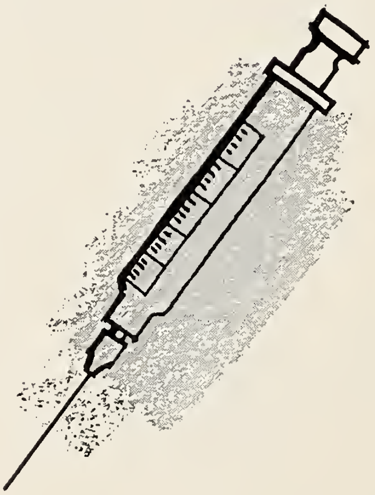
Detailed information may be secured from Eugene G. Miller, M.D., Coordinator, C.M.A. Commission on Cancer, 875 O'Farrell Street, San Francisco.

* * *

The Sixth International Congress of Gerontology, with Denmark, Finland, Norway and Sweden as hosts, will be held August 11 to 16, 1963, in Copenhagen, with one-day sessions being held in Malme and Lund, Sweden.

Symposia and sessions for papers are being organized within four divisions: Biological research; social sciences and psychological research; medical and clinical research; and social welfare research.

Scientists in this country who wish to present papers may obtain the necessary information from Dr. Ralph Goldman, secretary, American Branch, Clinical Medicine Research Committee, International Association of Gerontology, University of California Medical Center, Los Angeles 24.



THE PHYSICIAN'S *Bookshelf*

SELF-HYPNOSIS—A Conditioned-Response Technique—Laurence Sparks. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 255 pages, $5.75.

Of the spate of books on hypnosis that appear in such abundance currently, this one, "Self-Hypnosis," by Lawrence Sparks brings little to this field, which is new. This book purports to demonstrate that a fair number of persons can be trained to treat themselves for a variety of illnesses by the technique described before by a number of authors of so-called self-hypnosis.

The many theoretical and practical problems that this technique posits appear to interest the author not at all. There is an abundance of evidence to show that indigenous within every neurotic person is an alien and hostile propensity reluctant from a primitive identification with rejecting parental figures which one might call a harsh punitive super ego. This portion of the personality actively works against the patient's best interest. This is unconscious and is demontrative of the biblical statement that "thy right hand knoweth not and thy left hand doeth." This phenomenon has been abundantly demonstrated in psychiatry. This reviewer has seen a number of unhappy results resulting from patients who have treated themselves by self-hypnotic techniques and it is unfortunate that the author had seemingly so little interest in any detailed controlled study of hypnosis. In this application he presents no data of controlled results which are convincing that such a technique is effective or safe and like most lay persons who are interested in hypnosis, he has not, in the opinion of the reviewer, the degree of training in the behavioral sciences which would make such a scientific inquiry possible.

Until such time as such data gathered and evaluated by qualified psychiatrists are available to us, one is prompted to conclude that the person who treats himself by these methods for a neurotic illness is comparable to the physician who treats himself and of whom it has been said "he has a fool for a physician and an ass for a patient."

Charles W. Wahl, M.D.

* * *

SUICIDE AND MASS SUICIDE—Joost A. M. Meerloo, M.D., Ph.D. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 153 pages, $3.75.

Dr. Meerloo, in this book, "Suicide and Mass Suicide," has in the opinion of the reviewer, brought little that is new to this important and much studied phenomenon.

He has, however, compressed in a book of small compass a most complete description of the theories of etiology of suicide of which I have ever seen described. The various dynamic factors are also illustrated by examples of his own and other case material, and he has avoided the pitfall that seems to beset most writers on this subject; namely, that of oversimplification and dogmatism. In addition to discussing the numerous and subtle motives for personal suicide, he describes at length the relationship between the individual action and the sociological phenomena of mass hysteria and group frenzy. Lastly, he considers the efforts individually and collectively which are being made to detect and treat the potentially suicidal person.

This book is recommended for purchase. It contains much in its scant 144 pages.

Charles W. Wahl, M.D.

* * *

A MANUAL OF ELECTROTHERAPY—Second Edition, Thoroughly Revised—Arthur L. Watkins, M.D., Assistant Clinical Professor of Medicine, Harvard Medical School; Chief of Physical Medicine, Massachusetts General Hospital; Medical Director, Bay State Medical Rehabilitation Clinic, Boston, Mass. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1962. 272 pages, 157 illustrations and a plate in color, $5.00.

This second edition is being published four years after the first edition. It is a basic introduction to one facet of physical therapy called Electrotherapy. It reviews basic physics and physiology, and application of the many modalities in this field, including infra-red, ultraviolet, low voltage currents for both stimulation and ion transfer, diathermy, and ultrasound.

It is designed primarily for physical therapy students, and those physicians who might need a basic reference text in these fields.

The second edition updates the first edition, but actually has not sufficient change in it to outdate the first edition.

It is an excellent text for those readers for whom it was intended, mainly physical therapy students.

S. Malvern Dorinson, M.D.

* * *

THE MECHANISM OF ACTION OF WATER-SOLUBLE VITAMINS—Ciba Foundation Study Group No. 11—A.V.S. De Reuck, M.Sc., D.I.C., A.R.C.S., and Maeve O'Connor, B.A., editors for the Ciba Foundation. Little, Brown & Company, Boston, Mass., 1962. 120 pages, $2.50.

This symposium on the Mechanism of Action of Water-Soluble Vitamins presents interesting information concerning the complex structural nature of the form in which certain water soluble vitamins and their fractions are mobilized for action. The designs and structural formulae of the compounds and their intermediaries illustrates the advanced stage of current biochemistry. The major ingredients of the devices are enzymes without which the reactions could not proceed. What was a simple statement of biochemical "fact" 25 years ago turns out to be an exceedingly complex and often occult physicochemical and thermodynamic reaction. It is amazing to contemplate the wisdom of the pioneers who by means of simple biologic observations were capable of knowing so precisely and inferring so accurately the interdependence of these phenomena, the comprehension of which transcends the ability of all save those, all too few, who are actively working in the mechanistic field of modern biochemistry.

S. P. Lucia, M.D.

PROGRESS IN MEDICINAL CHEMISTRY—Volume 1—Edited by G. P. Ellis, B.Sc., Ph.D., F.R.I.C., Research Department, Benger Laboratories Limited, Holmes Chapel, Cheshire; and G. B. West, B. Pharm., D.Sc., Ph.D., School of Pharmacy, University of London. Butterworth, Inc., 7235 Wisconsin Avenue, Washington 14, D. C., 1961. 262 pages, $11.25.

The topics covered in this review are Pharmacological Screening Tests, Hypotensive Agents, Tranquillizers, Diuretic Drugs, Oral Hypoglycemic Drugs and Antifungal Agents, the manuscripts having been completed between January and April, 1960. The information for inclusion in each chapter has been chosen with rare discrimination, based on each author's familiarity with his subject, and although the book is the work of several authors, its style is uniformly lucid and interesting, making it a delight to read. In their preface, the editors state that this "collection of reviews is written for the chemist, biochemist, pharmacologist, and to a smaller extent, the clinician." Although, therefore, not intended primarily for the clinician, the practitioner can read the book with much profit, for it is a guide to his understanding of the principles and procedures involved in product development by the pharmaceutical industry and by university laboratories, thus affording him a better perspective on which his choice of drugs may be based.

Each chapter has an excellent bibliography.

Clinton H. Thienes, M.D.

* * *

FINANCING MEDICAL CARE—An Appraisal of Foreign Programs—Edited by Helmut Schoeck. Current commentaries on medical care systems in seven foreign countries written by economists, actuaries, political analysts, physicians, professors of medicine, and statesmen. The Caxton Printers, Inc., Caldwell, Idaho, 1962. 314 pages, $5.50.

One need not go beyond the borders of our northern neighbor—Canada—to witness the pressures being exerted by local and national governments on this continent to enact compulsory health insurance for various segments, or whole sections, of the population. In the United States, as in provinces of Canada, the widespread enrollment under voluntary health insurance and the variety of measures adopted by agencies on all levels of government to provide for the health needs of the indigent have failed to deter legislative proposals for one form or another of State or Federal health insurance. (As this review is written, Saskatchewan's compulsory health insurance program has just gone into effect.) Not infrequently, the experiences of European countries are cited as examples of the "backwardness" of America in this arena of controversy which has become the most explosive social and political issue of the day. With the publication of this collection of articles, Professor Schoeck has brought together in one reference source descriptions of health insurance systems in seven European countries. In so doing, he has had the assistance of economists, political analysts, administrators, physicians, and other experts who have had intimate experience with the programs in their own countries. The book lives up to its promise of *not* being impartial; for the editor and the contributors share a common belief in individual and voluntary efforts which are the very antithesis of the philosophy underlying "state medicine."

This volume will serve as a timely reference for all those who have supported the medical profession's opposition to Forand-King-Anderson—and variations yet to come. It will be an aid to physicians who frequently have been confronted with facts for which they lacked information to evaluate. It will undoubtedly have a sobering effect upon those protagonists who equate medicine's opposition purely with "selfish" motives. Above all, it presents in simple and concise language the background, origin, and present stage of development of seven programs, some of the problems they have attempted to resolve, and those which they have created.

Although the systems of health care in Austria, Australia, Germany, Great Britain, France, Sweden, and Switzerland vary with respect to their causes, objectives, and scope and extent of coverage, they reveal the different forms which centralized government can utilize. They portray the effects of different philosophies at different periods in the history of each country. The reader will find the article on "Medical Care for Youth . . ." in West Germany particularly intriguing in the light of the controversy over medical care for the aged in the United States. The article on the development of compulsory health insurance in Sweden is probably the most illuminating and well-written of all since it contains data and information which lend support to the author's arguments. It is unfortunate that some of the other articles lack comparable statistics, but their conviction of purpose and the insights they provide compensate in some measure for this shortcoming.

The volume concludes with two articles which describe the National Health Service in Australia, a system of voluntary-oriented health insurance which has been described by Sir Earle Page in other medical periodicals. It is one which the medical profession in Australia actively endorses and supports, and one which undoubtedly would have considerable appeal to the majority of physicians in this country who are faced with the alternatives before them. It is certainly the envy of the medical profession in Great Britain.

* * *

DRUG THERAPY—Frank C. Ferguson, Jr., M.D., Professor of Pharmacology and Chairman of the Department of Pharmacology, the Albany Medical College of Union University, Albany, New York. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1962. 411 pages, $7.50.

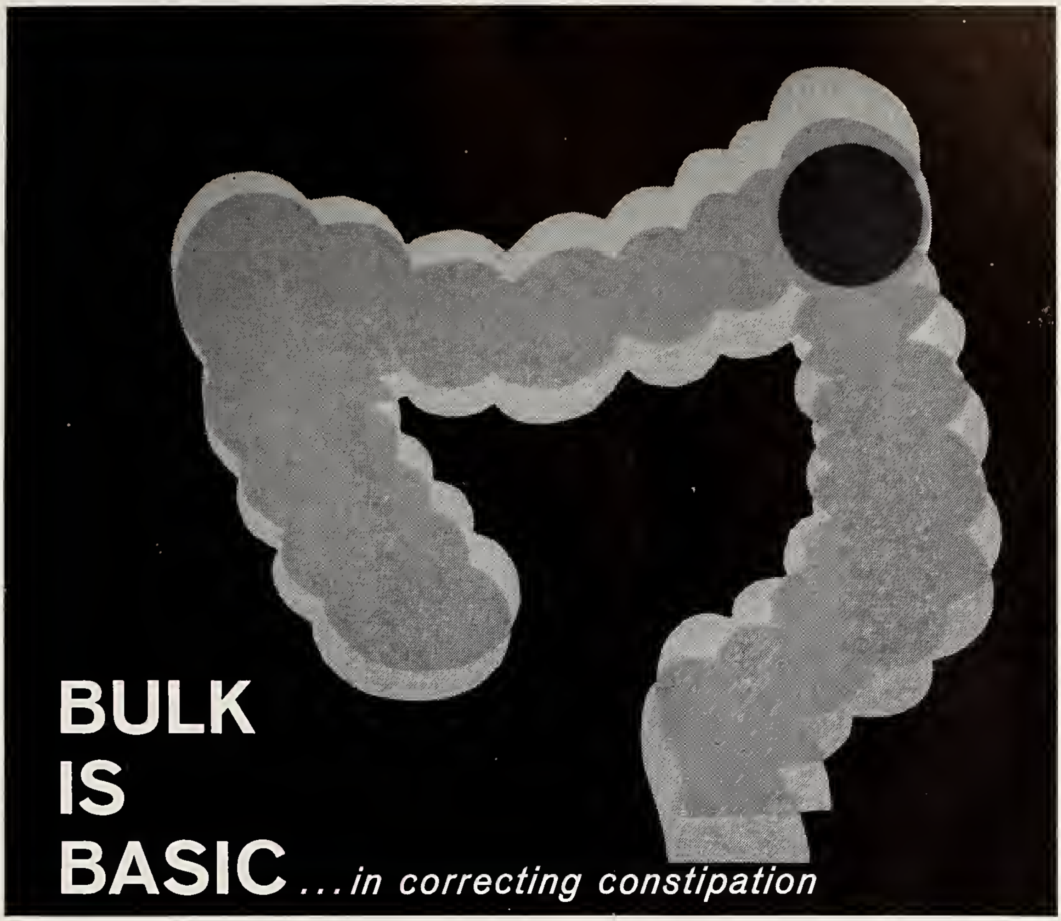
This book is a compendium of the author's personal opinions about drugs and their clinical use. He has provided a list of the compounds which he considers most efficient and least toxic and expensive, in variety sufficient to cover all therapeutic needs. He has usually discussed more than one compound in a class but has avoided duplication as much as possible. When several drugs (which he considers of equal value) exist, he has made a choice on the basis of the manufacturer, favoring products of the companies with the best practices.

Doctor Ferguson has included some 50 chapters in Drug Therapy, listed in ten general groups of drugs, such as anesthetic agents, anti-infective agents, compounds for the cardiovascular system, for the central nervous system, and for the endocrine system. Most chapters begin with general notes describing features of activity, toxicity and metabolism. Under "choice of drugs" are listed the ways in which agents differ. Under "clinical usage" indications for use and principles of dosage are described. Finally, specific drugs are listed under generic names with representative trade names for reference.

Since this is a small book, the author has excluded all material not directly pertinent to clinical therapy. Relations of chemical structure to activity have been excluded. Phonetic spelling and abbreviations are frequently used. No references are given.

The reviewer finds Drug Therapy a volume which can be very helpful and furnish valuable guidance to the practicing physician, house officer, and student. It is, of necessity, incomplete and may well produce cries of anguish from manufacturers whose products are not listed. It is recommended as a practical guide for the office desk or the medical bag.

Edgar Wayburn, M.D.



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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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Research in the Service of Medicine

LSD-25 Being Sold On Black Market

A black market now exists in LSD-25, a powerful drug capable of causing hallucinations, two Los Angeles physicians reported in the July 14 *Journal of the American Medical Association.*

Drs. Sidney Cohen and Keith S. Ditman said the recent appearance of the drug as an item of underworld traffic is "an alarming development."

Now that the drug has become available from sources concerned solely with the profits from illicit sales, they said, physicians may encounter patients in a state of LSD intoxication. The dangers associated with misuse of the drug include suicide, prolonged psychotic reactions and antisocial behavior, they said.

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801 Capitol Avenue,
Sacramento, California

There is illicit trade in LSD tablets, ampules and saturated sugar cubes, they said.

Some persons who take marihuana also take LSD and hold "LSD parties," they said.

"Occasional catastrophic reactions can be anticipated from such casual, unattended use," the two physicians warned.

The visual and mental distortions caused by the drug can be "a devastating experience" without the "saving knowledge" that they are drug-induced and temporary, they said. It is "not unlikely" that self-destruction or psychotic reactions may follow such an experience, they said.

Accidental ingestion of the drug by individuals who are unaware of its nature has already occurred, the authors said. A child who inadvertently consumed a drug-saturated sugar cube remained partially disoriented a month later, they said.

Addiction to LSD-25 has not yet been observed, they said. However, they said, a "new but not rare" type of multihabituation is appearing in which persons frequently indulge in a variety of stimulants, naroctics, sedatives, and hallucination-producing drugs, including LSD.

One patient, who said she and her "beat" friends regularly take one or another of eight different kinds of drugs, claimed that withdrawal symptoms for any single drug do not occur, they said.

LSD's ability to produce hallucinations was discovered 20 years ago, the physicians said. Since that time, nearly 1,000 articles have been published on the drug, they said. However, they said, the manufacturers have refused to introduce the drug commercially until its side effects are more precisely determined.

At the present time, LSD-25 is distributed only to those who wish to engage in scientific investigations, the authors said. Properly used the drug may aid in the study of mental processes, they said.

"Its ability to induce a 'model psychosis' makes it an excellent laboratory device for the study of psychotic-like phenomena," they said. "LSD-25 has also been employed as an adjunct to psychotherapy because recall of repressed memories is enhanced and ego defensiveness to conflict-laden material is reduced."

The authors are affiliated with the Veterans Administration Hospital and the University of California Medical Center.

SIMPLE AND INEXPENSIVE MECHANISM FOR SLOW PERFUSION OF TISSUE CULTURES—A. B. Weathersby and O. Wiseman. Amer. J. Clin. Path.—Vol. 37:640 (June) 1962.

A mechanism is described for perfusion of tissues or tissue cultures at a slow rate. A hyodermic syringe is driven by an electric clock type motor by means of a lead screw and half-nut engaging arm. A 0.25 cc. syringe will perfuse continuously for 54 hours.

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PIONEER MANUFACTURERS OF THE ELECTROCARDIOGRAPH

"K. O. POLIO" Is Name for Fall Polio Immunization Program

The massive Bay Area onslaught against poliomyelitis, scheduled to begin September 23, has been given an official name by the doctors of the County Medical Societies who are spearheading the program. The ambitious undertaking to immunize up to 3.500.000 people will be called the K. O. POLIO program.

Dr. Edward B. Shaw, chairman of the Bay Area Medical Association Committee, which is coordinating the program, announced the name and stated that it was selected because it suggests that the Sabin oral vaccine will provide a final "knock-out blow" to all types of paralytic polio.

It is expected that 90 per cent or more of the total population in this area will visit polio centers on September 23, November 4 and December 9 to eat a lump of sugar with the vaccine on it. This will be the largest mass vaccination effort in the history of the West, and probably the nation.

Polio centers will be set up in schools and other community locations throughout the Bay Area. Each person should take the vaccine on all three Sundays, according to Dr. Shaw, because each dose immunizes against one type of paralytic polio.

People of all ages, from 3 months to the eldest citizen, should take the thoroughly tested Sabin

(Continued on Page 72)

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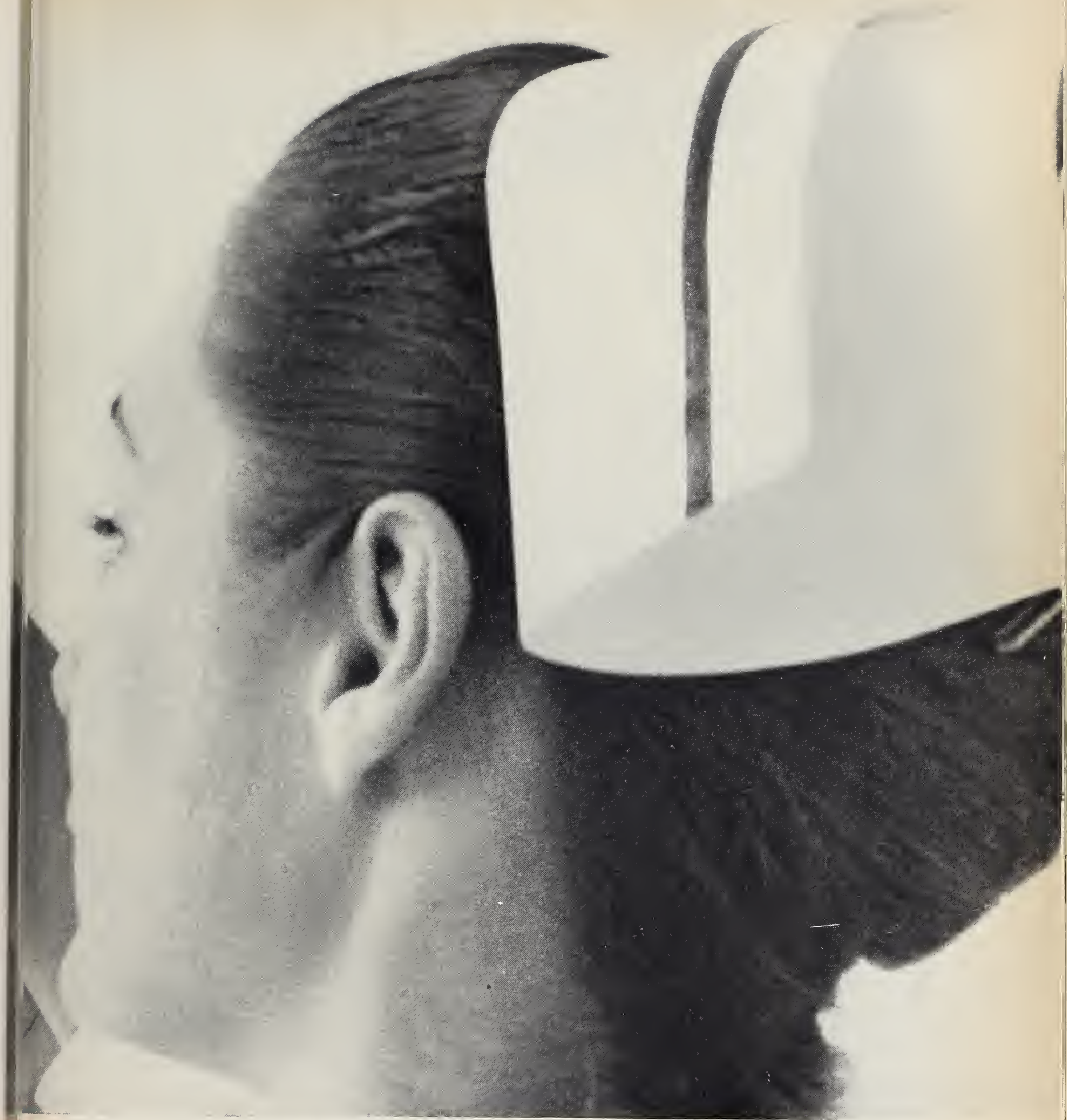

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Patient Stays Conscious During External Heart Massage

An unusual case of a man who remained conscious while undergoing closed-chest massage to restart his heart is reported in the August 4 *Journal of the American Medical Association.*

The case was described by Dr. George M. Bernier, department of medicine, University Hospitals of Cleveland.

It is "much more common" for a patient to be in a coma during and after external heart massage, Dr. Bernier said. The comatose state is believed to be caused by a marked reduction in the flow of blood, and consequently the oxygen supply, to the brain, he said.

However, the 63-year-old patient who did not go into a coma had lived for two years with a pulse rate of 20 to 40 beats a minute, he said. The normal range is 67 to 72 beats a minute.

"It is possible that the cerebral blood flow obtained during closed-chest massage in this man did not differ much from his usual state," Dr. Bernier said.

There is no information as to whether a chronic, mild lack of oxygen can result in decreased oxygen needs of brain tissue, he said, "but it may be that an adaptive mechanism allows more effective utilization of oxygen."

Dr. Bernier said he felt the case illustrated the effectiveness of external heart massage in maintaining blood flow to the brain.

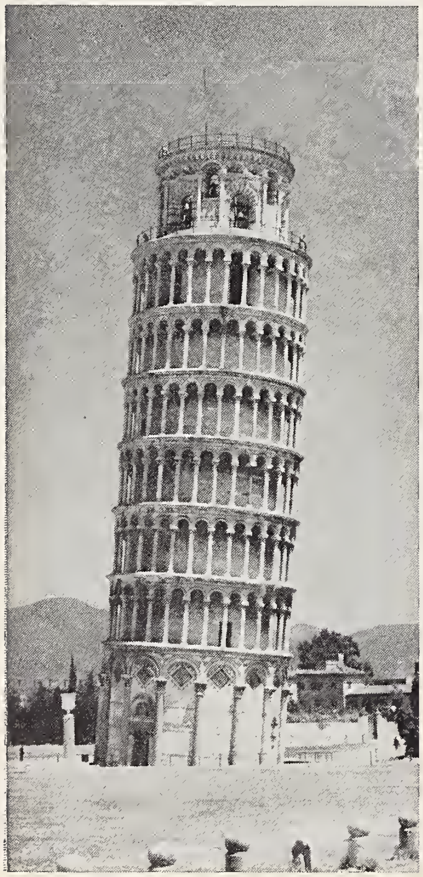
The patient had had a heart condition for several years and was in the hospital when his heart stopped beating, according to the case report. Four minutes after closed-chest massage was begun, his respiration became normal and he was conscious throughout the 35 minutes the procedure was continued, it said. The patient was discharged from the hospital within a month and a year later was working at a part-time job, it said.

"K. O. POLIO" Is Name for Fall Polio Immunization Program

(Continued from Page 60)

vaccine. Dr. Shaw also points out that everyone should take the vaccine regardless of having received Salk polio shots because the Sabin oral vaccine gives added protection and makes it impossible for a person to be a "carrier" of the disease.

The K. O. POLIO organization is now being formed. Thousands of volunteers are being sought to help in carrying out the program, and in educating the public regarding it.



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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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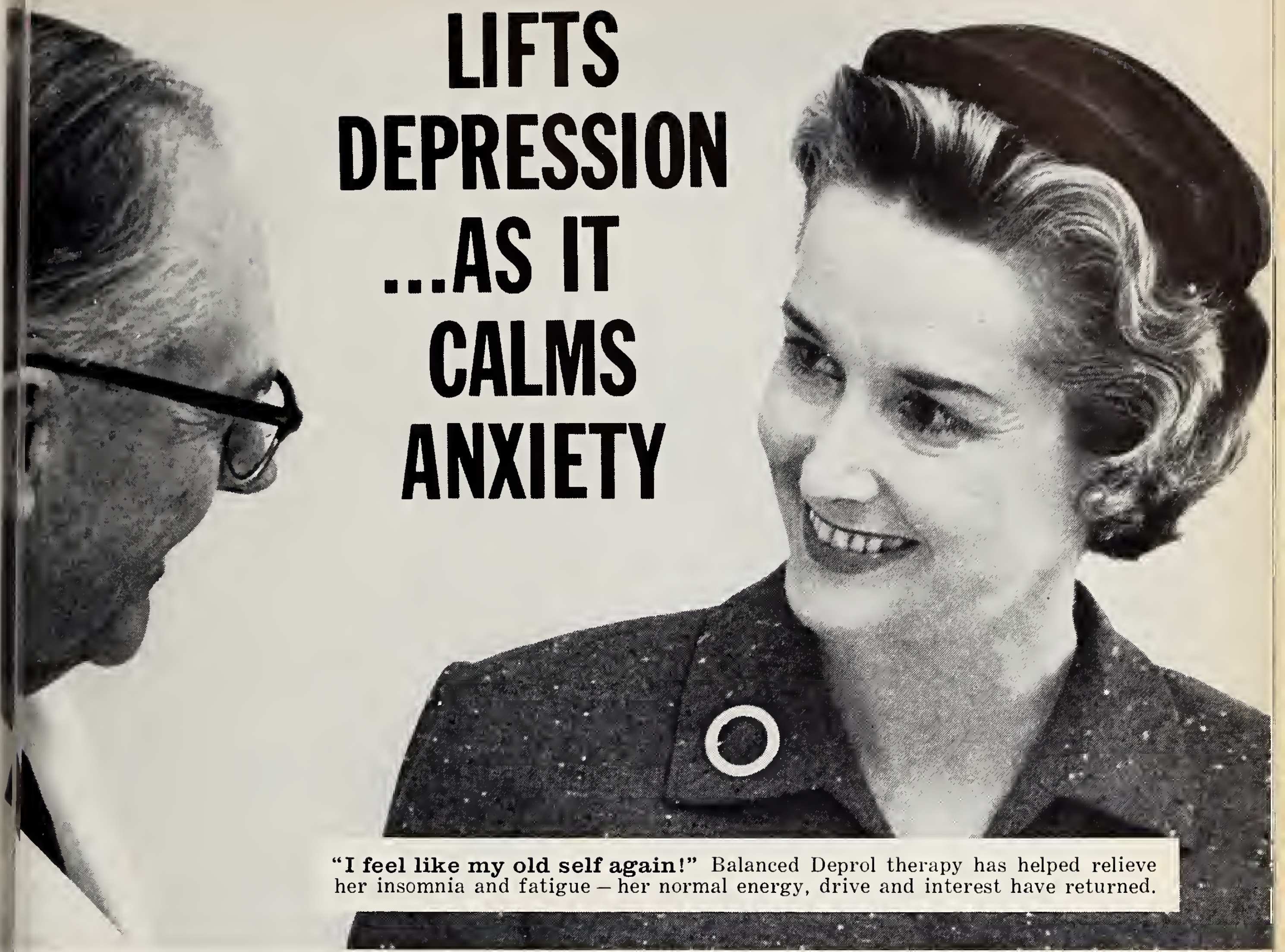

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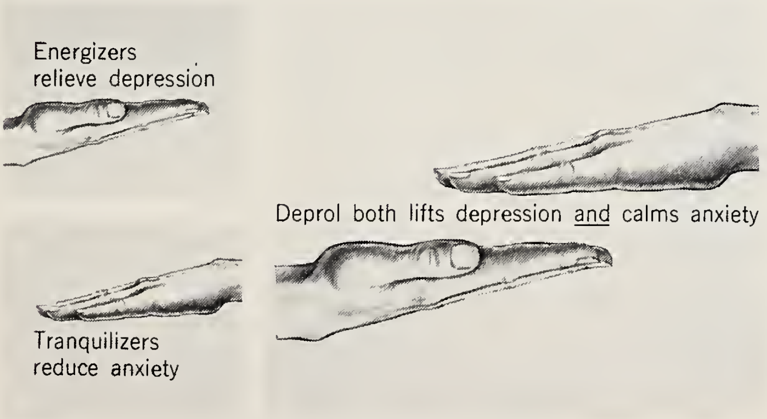
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References: Gordon, E. E., and Haas, A., Ind. Med. Surg., 28: 217, 1959.

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No Proof Body Stores Surplus Protein

Scientific evidence does not support the theory that the body stores surplus protein in the way it stores sugars, starches and fats for emergency demands, according to an article in the August 25 *Journal of the American Medical Association.*

Protein is a "currently glamorous nutrient" and enthusiasm for protein food is widespread in the United States today, L. Emmett Holt Jr., M.D., and Elias Halac Jr., M.D., New York City, and Charlotte N. Kajdi, A.B., Baltimore, wrote in the *Journal.*

A major factor in encouraging a liberal protein intake is the concept that "reserve protein" can be built up in advance to offset protein shortages that may develop later due to privation or illness, they said.

However, they said, "the data upon which this concept rests are susceptible to different interpretations," and "one must conclude that the existence of protein stores has not been established."

The researchers reported the results of two studies they conducted to determine if a protein surplus enabled rats to withstand a subsequent deprivation of protein.

In the first study, there was no difference in survival between a group of rats fed a moderate protein diet and then deprived of protein and a group

(Continued on Page 33)

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Safest Color for Car Is Blue and Yellow

From the standpoint of motoring safety, studies indicate that blue and yellow are the best car colors.

In fact, a two-tone blue and yellow automobile appears to be one of the safest combinations, according to an article in the September *Today's Health* magazine, published by the American Medical Association.

The color of an automobile can mean the difference between life and death, the article said.

Studies at the University of California at Los Angeles, it said, showed that the color of an approaching automobile definitely influences a driver's judgment of how far away it is.

"Judged from a distance of 200 feet, objects of some colors appeared to be up to six feet closer than objects of other colors," the article explained.

"And the investigators point out that under average conditions, a distance of six feet in judging distance may easily mean the difference between a serious accident and no accident."

Of the various colors tested on 164 subjects, blue and yellow made distant objects seem closest—under both daytime and night-time conditions, the article said. Gray shades made objects appear to be the farthest away, it said. Blue was ranked safest in daylight and fog, it said, and yellow safest at night.

Colors have both a physical and psychological effect, the article pointed out.

Red, green and blue have a very definite physical effect, it said.

Tests show that when red predominates in a room it increases blood pressure, quickens muscular reactions, excites emotions, tends to produce restlessness, and makes time appear to pass much more slowly, it said. On the other hand, green has been shown to have a calming effect, it said, and time tends to slip by faster for a person in a blue room.

Happiness also can be linked to room color, the article said. Persons surrounded by dull gray walls experience monotony, fatigue, headache, discontent, irritability, and hostility, it said, while those in a colorfully decorated room had feelings of comfort and well-being.

The most depressing colors are black and gray, the article continued, and the most uplifting are those which predominate in nature.

Women are more affected by color than men, it said, and psychologists believe persons who dislike color, or fail to respond to it are emotionally repressed.

"Experiments conducted at the Drexel Institute of Technology, Philadelphia, have shown that those whose wardrobes feature a variety of color tend to be much better balanced emotionally than persons whose attire is drab," it said.

The article was written by John E. Gibson.

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REFERENCES AND REVIEWS

Radiation Breakage of Human Chromosomes in Vivo and in Vitro—A. Norman, R. E. Ottoman, and R. C. Veomett, Radiology, 79:115 (July) 1962.

Chromosomes in the leukocytes from the peripheral blood were examined before and after irradiation in vivo and in vitro to determine the immediate effect produced. While the data obtained are admittedly preliminary and subject to some uncertainties of technique and interpretation, the radiosensitivity of human chromosomes was demonstrated by their fragmentation following exposure to irradiation.

* * *

Stereoscopic Televised Fluoroscopy—H. M. Stauffer, G. C. Henny, and A. W. Blackstone, Radiology, 79:30 (July) 1962.

The operation of an experimental televised stereoscopic fluoroscopy system is described. Pulsed operations of two-image orthicon television chains is employed to separate the right and left eye images for presentation to monitors viewed with polaroid glasses. Application in selective catheterization procedures in infants and experimental animals and in foreign-body extractions from the lung is anticipated.

* * *

Ventilatory Function in Normal Children—R. M. Cherniack, Canad. Med. Assn., 87:80 (July 14) 1962.

Vital capacity (VC), maximum breathing capacity (MBC), and maximal midexpiratory flow rate (MMF) were determined in 260 male and 261 female normal children whose ages ranged between 3 and 17 years, and whose height ranged between 70 and 210 cm. Relationships of these measurements of pulmonary function to age and body-size were sought, and regression equations were obtained for calculating VC, MMF, and MBC from age and height. Nomograms for predicting normal values are presented.

* * *

Postmortem Examination of Pulmonary Veins—H. R. Bates, Jr. Amer. J. Clin. Path.—Vol. 37:639 (June) 1962.

A simple method is described for in situ examination of the major pulmonary veins at autopsy.

* * *

Methohexital Sodium—C. P. Wangeman. Anesth. Analg. Vol. 41:307 (May-June) 1962.

Methohexital sodium is a new ultrashort-acting oxybarbiturate 2½ times as potent as thiopental sodium, but with a very short recovery period and minimal aftereffects. A description of a simple method of continuous administration of the drug and an account of the author's experiences during 427 surgical operations of all kinds are included. This agent has special value (1) as a means of producing controlled sedation during regional anesthesia and (2) as an anesthetic agent in the poor risk patient.

* * *

Chemical Mediators of Acute Allergic Reaction—G. B. Logan, Amer. J. Dis. Child., 104:185 (Aug.) 1962.

The acute allergic reaction is probably mediated by pharmacologically active substances that are formed in the body, where they exist in a "pro" form, or result from cellular injury by antigen-antibody assault. Either an antigen-antibody reaction or other stimuli release these substances to

(Continued on Page 38)

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A.M.A. Issues Revised First Aid Manual

Since the beginning of World War II, when first aid became for a time a classroom subject in many schools, the art of doing what's right at the time of an injury has evolved in step with medicine itself.

Consequently, what used to be considered good practice when dad was a boy is often no longer recommended by medical authorities. Some of the old-style first aid procedures, in fact, have been found to be more injurious than the injury itself.

The most up-to-date list of dos and don'ts for handling the more common variety of emergencies has been issued by the American Medical Association in a 48-page pocket-size first aid manual. Subject matter ranges from cuts to childbirth and from scorpion stings to mental disturbances.

"It is a digest of the best knowledge available on the subject at this time," said Dr. Raymond L. White, director of the A.M.A.'s Division of Environmental Medicine, which published the booklet. It succeds an earlier manual first published by the A.M.A. in 1952.

Among the newer first aid concepts recommended and illustrated in the manual are techniques for the control of severe bleeding and artificial respiration.

Heavy bleeding resulting from cut blood vessels can best be stopped by applying pressure directly over the wound, rather than employing some of the older methods, the manual stresses. A clean cloth is preferred, but if all else is lacking the bleeding can be stopped with direct pressure from the hand or fingers. Stopping blood at the so called "pressure points," which first aiders used to learn by rote, is ignored and in red letters the booklet spells out: "Never use a tourniquet to control bleeding except from an amputated, mangled or crushed arm or leg."

As for artificial respiration, the booklet recommends the new mouth-to-mouth technique and illustrates its use with both adults and youngsters, although it also contains information on a manual method when mouth-to-mouth breathing is impossible.

Among other subjects discussed are shock, transporting the wounded, epileptic seizures, massive wounds of the body, poisoning, burns, sprains and strains and special wounds.

A section lists emergency first aid supplies, most of which can be found in the average household, and which include only three "medicines"—mild soap, baking soda and table salt.

The new manual was prepared by the A.M.A.'s Council on Occupational Health and the Department of Health Education. Many of the recommendations were made by physicians who by the nature of their work are most often confronted with such emergencies.

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Milky Disinfectant Being Taken As Medicine

A new poisoning hazard was reported in the August 18 *Journal of the American Medical Association.*

A disinfectant containing hexachlorophene is being mistaken for milk of magnesia because of its similar milky appearance, according to a *Journal* article.

Ten cases in which hospital patients accidentally swallowed the disinfectant were reported by Drs. John B. Wear Jr., Madison, Wis., and Robert Shanahan and Rigdon K. Ratliff, Ann Arbor, Mich.

The hexachlorophene solution is used prior to surgery to clean the site of the operation, the authors said, and in most of the poisoning cases, the disinfectant had been placed in the patient's room in a paper cup.

Taken by mouth, the solution causes stomach irritation with vomiting and diarrhea, which, if excessive, can dehydrate the body and lead to death unless the patient is treated, they said.

To prevent such accidents, the authors said, hospital personnel should never dispense the disinfectant in a drinking container and the patient should be warned not to drink it.

Furthermore, they said, the hospital or the manufacturer should be encouraged to add a coloring substance to the solution so that it cannot be confused with milk of magnesia or other medication.

No Proof Body Stores Surplus Protein

(Continued from Page 10)

of rats fed a high protein diet and then deprived of protein, they said.

In the second study, the previous findings were confirmed and it was found that the percentage of protein in fat-free tissues did not differ significantly between rats fed a normal protein diet and those given a high protein diet, they said.

Thus, they said, neither study supports the concept of protein stores.

The authors concluded that there is "no virtue in feeding protein beyond the minimum adequate quantity."

Protein deprivation cannot be taken care of in advance, they said. As a general rule it is after the event that shortages are made up, they said, adding:

"Nutritional requirements in convalescence are very different from those in health. The convalescent is a different animal. At this time he needs and should have more protein than the minimal requirement for health."

On the basis of short-term studies, they added, there is no evidence that there is harm in giving more protein than the minimum adequate requirement to healthy persons. However, the possibility that long-term differences may occur cannot be denied, they said.

Although large areas of the world are suffering from protein deficiency, the researchers said, this disorder is encountered only rarely in the United States in a port or border city imported from a less favored foreign country.

Reasonably good information exists on the minimum requirements of a standard high-quality protein and a physician can ascertain whether a patient is receiving adequate protein with some simple tests, they said.

The authors are affiliated with the departments of pediatrics of New York University School of Medicine and Johns Hopkins University.

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Heart Drug Used For Glaucoma

Digitalis, long used for heart failure, has been found to be useful in treating several types of glaucoma, an eye disease which may lead to blindness, Kenneth A. Simon, M.D., and Sjoerd L. Bonting, Ph.D., Bethesda, Md., report.

Writing in the August *Archives of Ophthalmology*, published by the American Medical Association, the two researchers said digitalis had been used to treat 16 patients with chronic simple glaucoma and five patients with congenital and juvenile glaucoma.

Digitalis alleviates the main characteristic of glaucoma, intense pressure within the eye, by reducing production of the fluid which fills the eye cavity, they said. The drug inhibits an enzyme involved in the formation of the fluid, cutting fluid producion by 45 per cent, they said.

This is comparable to the effect produced by acetazolamide, the drug currently used to reduce ocular pressure in glaucoma, the authors said. Digitalis could be used when side-effects or sensitivity precludes the use of acetazolamide, they said.

The researchers are affiliated with the Ophthalmology Branch, National Institute of Neurological Diseases and Blindness, National Institutes of Health.

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Advances in Surgery	One Week, Dec. 10
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REFERENCES AND REVIEWS

(Continued from Page 26)

exert their actions in the patient, producing the varying manifestations of the acute allergic reaction. The role of histamine, 5-hydroxytryptamine (serotonin), acetylcholine, slow-reacting substances of anaphylaxis, and bradykinin is discussed, and an attempt is made to assess their importance. Heparin release is probably of significance only in anaphylaxis in the dog.

* * *

ALCIAN GREEN: A ROUTINE STAIN FOR MUCINS—F. A. Putt and P. B. Hukill, Arch. Path., 74:169 (Aug.) 1962.

Alcian green is a specific stain for acid mucopolysaccharides. The simplicity of its application recommends it as a preferred method for epithelial and connective tissue mucins in routine pathologic material. Two staining techniques are described, one involving Kernechtrot and metanil yellow as counterstain, the other involving the Verhoeff-van Gieson elastic tissue method as counterstain. The second method is useful in studying tumors, allowing the evaluation of mucus production and vascular invasion in the same section.

* * *

HISTOLOGICAL STUDY OF WOUND WASHINGS FOR TUMOR CELLS—M. Weinlos, G. R. Macdonald, and J. D. Taylor, Canad. J. Surg., 5:278 (July) 1962.

Wound washes from 169 patients were obtained either at operation or at autopsy and examined for tumor cells on a double blind basis. The cellular material was stained with hematoxylin-eosin and examined by a pathologist. Tumor cells were found from (1) 25 per cent of patients with cancer and (2) 13 per cent of patients where cancer was neither suspected nor subsequently found. Washes from Group 2, where cells that appeared malignant were detected, were termed "false positives." Although tumor cells can be isolated from wound beds, this study emphasizes the need for better cytological techniques for the identification of malignant cells.

* * *

DETRUSOR HYPERTROPHY: ROENTGENOGRAPHIC DETECTION OF EARLY BLADDER NECK OBSTRUCTION—J. Edeken, G. Strong, and A. Khajavi, Radiology, 79:88 (July) 1962.

A soft-tissue shadow, surrounding the contrast-filled bladder, was observed during intravenous urography in 40 of 57 patients with proved bladder-neck obstruction. This finding, representing compensatory hypertrophy of the detrusor muscle, is best demonstrated before decompensation has occurred. The sign is usually lost when large amounts of residual urine stretch and thin the previously hypertrophied bladder wall. The shadow has not been observed in normal subjects.

* * *

SIMPLE GASTRIC BIOPSY: EXPERIENCE WITH CROSBY-KUGLER CAPSULE—M. H. Floch and T. W. Sheehy, Gastroenterology, 43:32 (July) 1962.

Using the Crosby-Kugler capsule, 61 gastric biopsies were performed on 40 patients. The procedure described yielded diagnostic tissue in all but one instance. No episode of perforation or bleeding was encountered by serial clinical, hematological, or stool guaiac studies. The technique is safe and rapid and causes little discomfort to the patient.

* * *

URINARY WHITE CELL EXCRETION—P. J. Little, Lancet 1:1149 (June 2) 1962.

The urinary white cell excretion rate has been measured in 50 women using a form of mid-stream sampling. The

(Continued on Page 46)

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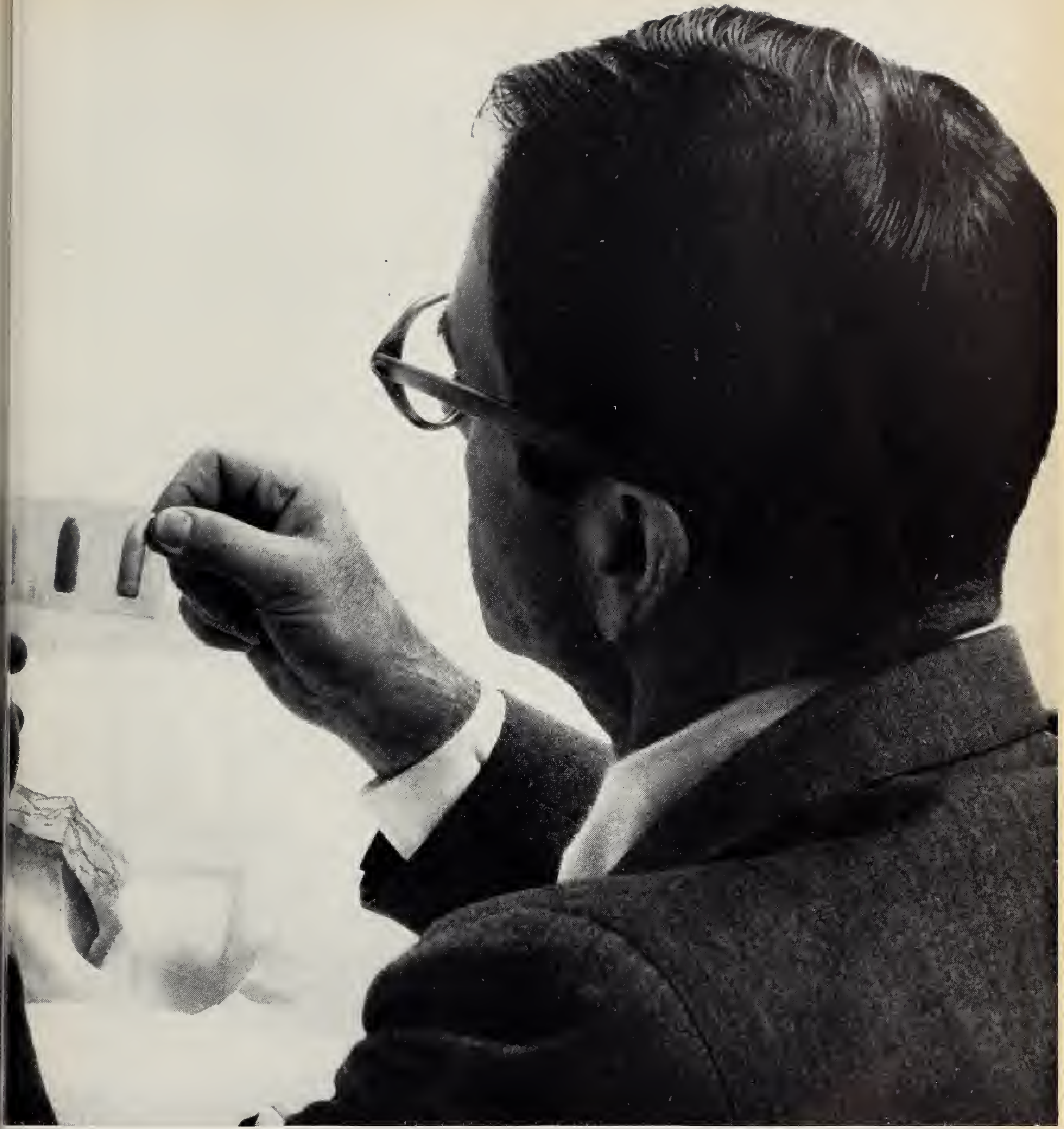

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REFERENCES AND REVIEWS

(Continued from Page 38)

results are similar to those obtained when the urine is collected with a catheter. In addition, in 304 patients the white cell excretion rate measured using a Fuchs-Rosenthal counting chamber has been compared in the same urines with the number of cells seen per high power field on examining the centrifugal urine deposit without a counting chamber. Of 155 urines in which only 1 to 5 cells were seen per high power field, 42 had abnormally high white cell excretion rates. Some of these urines were infected.

* * *

Behavior of Serum Quinine Oxidase in Diseases of Liver—I. Ragno and I. Baldi, Riforma Med., 76:408 (April 14) 1962.

The study of quinine oxidase in liver disease was conducted on 86 persons; 56 suffered from hepatopathies, 15 had other diseases, and 15 were considered healthy. Results obtained showed that the reaction was not specifically connected with proof of damage in the hepatic parenchyma. In cases of acute hepatitis the reaction was intensely positive. The test, therefore, should not be considered as specific in revealing the existence or not of hepatic parenchymal disorder, but because of intense positivity observed in cases of acute hepatitis, it should be considered as a useful test in the differential diagnosis of hepatocellular jaundice and jaundice due to cholestasis.

* * *

Chronic Calcific Pencreatitis in a Child—J. M. Batson and D. H. Law, Gastroenterology, 43:95 (July) 1962.

A case of chronic calcific pancreatitis occurring in a child is reported. Unusual manifestations of this case, including presentation with ascites, a probable traumatic etiology, and the rarity of this condition occurring in childhood are discussed and reviewed. Although pancreatic calcification is seen on x-ray, the patient has developed normally and is essentially asymptomatic after a three-year followup.

* * *

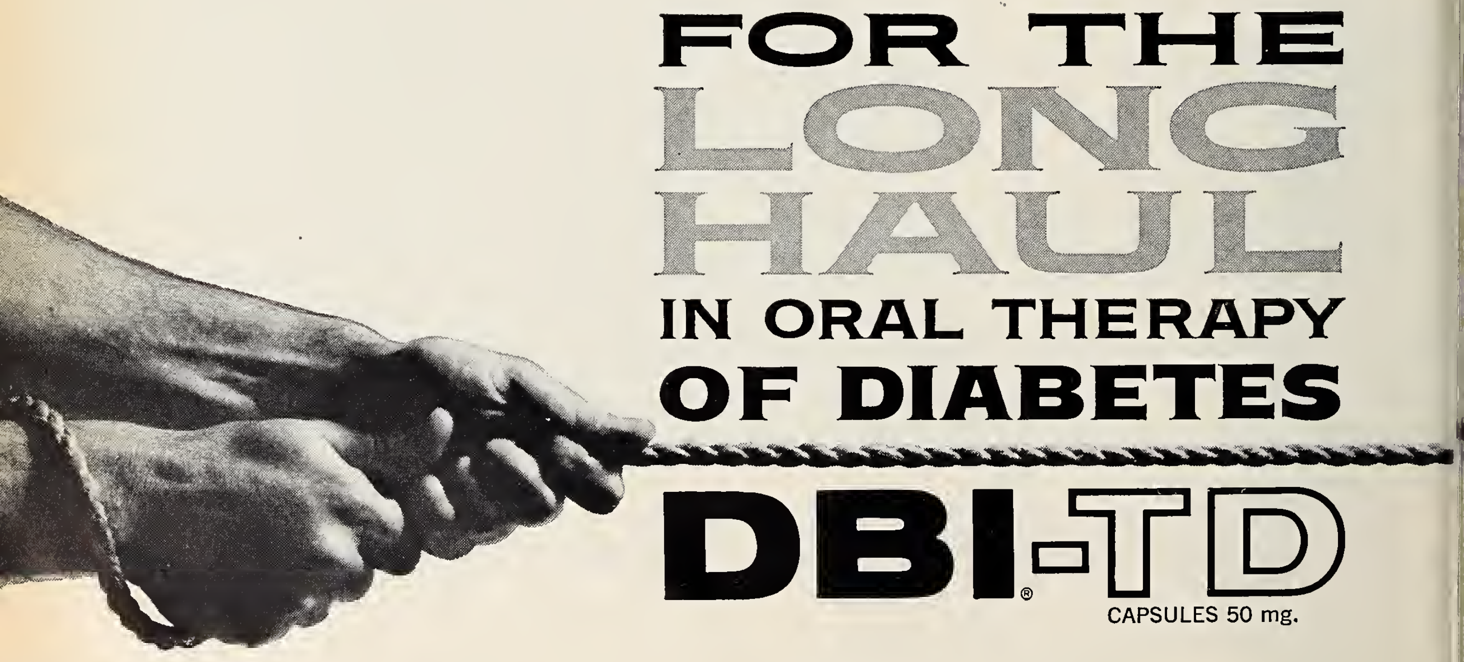
Combination Therapy of Malignant Hemangioendothelioma with Radiation and Methotrexate—G. A. Hyman, F. Herter and R. Guttmann, Radiology, 79:6 (July) 1962.

The authors had an unusual opportunity to study 4 cases of metastatic malignant hemangioendothelioma in the course of one year. These were treated with methotrexate alone, radiotherapy alone, and methotrexate and radiotherapy in combination. The authors believe that radiotherapy as well as methotrexate alone in adequate dosage will cause tumor regression for periods as long as 10 months. They conclude that the combination of the two agents yields the best results in the treatment of this rare and aggressive tumor.

* * *

Treatment of Carcinoma of the Endometrium—J. M. Sala and J. A. del Reggato, Radiology, 79:12 (July) 1962.

A series of 242 cases of carcinoma of the endometrium with a 100 per cent followup is reported. The absolute survival rates at 3, 5, and 10 years are 56 per cent, 46 per cent, and 39 per cent respectively. No vaginal implants or metastases were observed during the first three years of followup of 118 patients treated by a combination of preoperative radiotherapy and hysterectomy. The trend of the data favors roentgenotherapy over curietherapy as the modality of choice for the preoperative irradiation of carcinoma of the endometrium.



Brain Surgery Performed With Hypnosis

A brain operation performed with hypnosis providing the major part of anesthesia was reported in the September 1 *Journal of the American Medical Association.*

The operation was performed on a 38-year-old man in Veterans Administration hospital, Indianapolis, to relieve epileptic attacks caused by an accidental gunshot wound in the right forehead, Drs. Som N. Nayyar, neurosurgeon, and John Paul Brady, psychiatrist, Indiana University Medical Center, Indianapolis, said.

Although there are some special difficulties associated with the use of hypnotic suggestion as a means of anesthetizing a patient, they said, hypnosis has properties that make it preferable in certain situations.

In this case, they said, the brain condition had made the patient "hostile, suspicious and rather uncooperative." General anesthesia was undesirable because of the need to monitor the electrical activity of the brain during the procedure, they said, and with local anesthesia the patient's disposition might have proved to be a problem.

Therefore, hypnosis was chosen, they said. The patient was hypnotized the night before the operation to provide sound sleep and relieve anxiety, they said. The patient was rehypnotized before the operation with a suggestion of deep anesthesia of the head region, they said. During the four and one-half hour procedure, they said, only small amounts of a local anesthetic and a pain-killing drug were needed.

Hypnosis provided "the best surgical conditions" for this type of operation, the physicians said, and perhaps the most important advantage was the relaxation, calm, and cooperation evidenced by a previously difficult patient throughout a long and anxiety-provoking brain operation in the awake state.

The authors said there apparently has been only one previously published report of a brain operation being performed with hypnosis.

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Important: Before prescribing DBI-TD, the physician should be thoroughly familiar with directions for use, including indications, dosage, possible side effects, precautions and contraindications. Write for complete literature.

1. Pomeranze, J.: Clinical Med. 8:1155, June 1961. 2. Krall, L. P. and Bradley, R. F.: Geriatrics 17:337, May 1962. 3. DeLawter, D. E. et al.: J.A.M.A. 171:1786, Nov. 28, 1959. 4. Perkin, F. S.: J.A.M.A. 173:36, May 7, 1960. 5. Pearlman, W.: Phenformin Symposium, Houston, Feb. 1959. 6. Radding, R. S. et al.: Metabolism 11:404, April 1962. 7. Gold, A. et al.: Applied Therapeutics 2:137, 1960. 8. Brown, G. D. and Gabert, H.: Applied Therapeutics 4:451, May 1962. 9. Gold, A.: Applied Therapeutics 4:466, May 1962.

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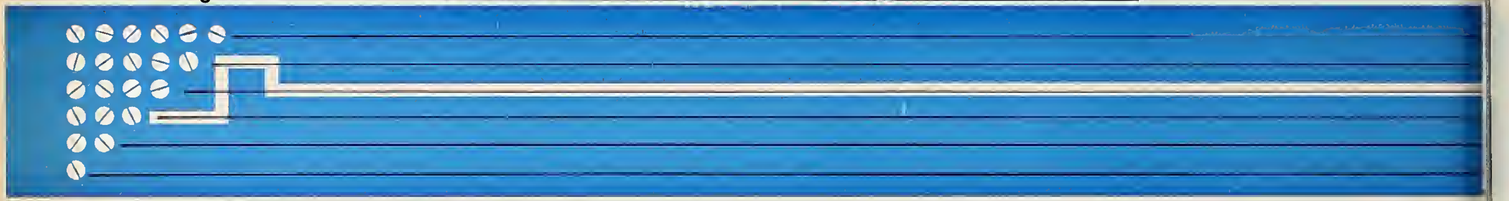

Mrs. C. S., a youthful 50-year-old, is a busy clubwoman and civic leader. Her mother was a diabetic, and so is her daughter. In November 1956, she was transferred to Orinase after 16 years on insulin. Following a period of adjustment, her Orinase dosage was stabilized at 2 Gm. daily.

Mrs. S. has no need for increased Orinase in the course of her extensive social activities. For instance, she can and often does arrange for impromptu entertainment at her home without requiring additional dosage.

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occasions, and finds her tr
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Volume 97 OCTOBER 1962 Number 4

Newer Concepts in Relation to Hypertension

LOUIS N. KATZ, *M.D.*, Chicago

Are there really any new concepts in the area of hypertension or are today's views merely a matter of emphasis of what has been known for many years?

Clinical handling of hypertension has advanced greatly in the past 30 years. Hypertension, at the same time, has been increasing in frequency. This increase has been greater for secondary hypertension than for primary (essential) hypertension since in a greater proportion of cases a known cause has been revealed—be it pyelonephritis or renal vascular occlusion, the most frequent causes, or coarctation of the aorta, pheochromocytoma, Cushing's disease, adrenal tumors, primary aldosteronism or polycystic kidney. With this separation of the secondary from the primary form have come better methods of diagnosing the known causes and improved methods of medical and surgical therapy.

At this point it should be noted that the identification of a possible etiological cause for hypertension does not *per se* prove that it is the cause. The proof ultimately rests upon the demonstration that removal of the "cause" relieves the hypertension. Circumstantial evidence that the hypertension was produced by the suspected factor even though the elevated blood pressure is no longer dependent upon it is obviously less convincing. However, this possibility cannot be excluded since such independence of its primary cause has been shown to occur in experimental renal hypertension: Removal of an ischemic kidney soon after hypertension develops will restore the blood pressure to normal, whereas removal at later dates will not. Furthermore, not all patients with renal vascular occlusion and pyelonephritis have hypertension.

Even without any final decision as to the cause of primary hypertension, its natural history and its demonologic features have been made clearer and some glimmerings of the role of hereditary and environmental factors, both physical and psychological, have been obtained. More important, accelerated (malignant) hypertension has been more clearly delineated from so-called benign hypertension, and drug and surgical therapy in handling all forms of hypertension has advanced greatly. Today there is available a vast array of hypotensive drugs and surgical procedures which will lower blood pressure, if only the physician has the wisdom to choose properly among them and, more important, to know when they should be used.

Once again, practical therapy has outpaced conceptual knowledge, and empiricism still reigns over much of the practical handling of hypertension. I stress this last point to emphasize that momentary fashions in concept should not sway the practicing physicians too much. It is his task to pick out the kernels and discard the chaff. One does not treat hypertension any more than one treats an electrocardiogram or fever or high blood cholesterol (except, as in cases of excessively high fever or blood cholesterol, where one tries to lower the level be-

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Cardiovascular Institute, Michael Reese Hospital and Medical Center, Chicago 16.

Presented as part of a Panel on New Approaches and Treatment of Hypertension at the 2nd General Meeting at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

cause there is an instinctive abhorrence of a wide shift from what is considered to be the normal).

When should one treat hypertension? I think all will agree that accelerated (malignant) hypertension should be treated when recognized, and even when it is anticipated. The evidence is clear that longevity with comfort has been increased in such cases. I think one should treat benign hypertension when the risk of clinically manifest atherosclerosis is great. Other means of therapy, including diet, are as important as hypotensive therapy in hypertensive patients with a proclivity to ischemic heart disease. This is true to a lesser extent in cerebrovascular disease, for in a large proportion of such cases the condition is due to hypertensive vascular disease unaccompanied by atherosclerosis. When these dreaded sequelae of hypertension are excluded, the indications for hypotensive therapy in primary benign hypertension are ill defined. Hypotensive drug therapy is probably employed far too often, many patients, who are not really benefited, being made uncomfortable or even harmed by the creation of unwanted side effects or iatrogenic heart disease. What applies to primary benign hypertension applies also to benign secondary hypertension except that here the possibility of removing the cause, when feasible, should be seriously considered in terms of expected benefit in comfort and longevity as against the risk and complications of surgical operation.

Hypertension is pathogenically multifaceted. The nervous system is involved in hypertension. This involvement includes afferent nerves from many external and internal sensors, the latter being in part homeostatic; it also includes the complex central nervous system cybernetic apparatus, with neurons located in the hypothalamus, thalamus, limbic areas and cerebral cortex. All of these impulses ultimately reach the final common paths in the efferent nerves to the systemic arterioles (and doubtlessly the venules) and the heart. It is also possible that some of these impulses act by way of efferent nerves to the kidney, its vasculature, its excretory apparatus or its secretory portion, notably the juxtaglomerular apparatus where renin is formed. It is also likely that some impulses act by way of efferent nerves to the endocrine glands, notably the adrenal medulla and cortex and the anterior and posterior pituitary.

Through these several paths to the kidneys and other endocrine glands, a number of factors interact by way of the hormones they secrete and by their effect on the electrolytes and water content of the body to readjust their several rates of activity. The end result is to adjust and maintain the blood pressure. Any number of feedback mechanisms are set up in this way to keep the blood pressure constant. It is the very complicated multichanneled mechanism which I wish to stress rather than the dominance of any one over the other in considering the pathogenesis of hypertension.

There is some evidence to suggest the importance of the nervous system, operating through the mechanism of conditioning, in hypertension. The Russians recently reported the development of persistent hypertension in monkeys subjected to conditioned stresses.

Since the control of blood pressure has been evolved with the development of animal species, one would expect that this would be genetic in character. Consequently, genetic variations might be expected to lead to a range of normal blood pressure in a large population that would deviate around a mean in a dome-shaped curve, as Pickering has suggested —a dome which would shift to higher levels of blood pressure with age. And if any sort of elevation of systemic blood pressure carries with it a detrimental effect on the arterial vasculature, which is a function of the blood pressure level and the time over which it operates, then one can see how such genetically engendered high blood pressure would lead in such persons to hypertensive vascular disease more often than in those with a genetically lower blood pressure level. This does not mean that this is the only mechanism involved even on a genetic basis. It simply means that the gearing of blood pressure level over a wide range can be determined by a genetic trait. Furthermore, this does not mean that the distribution curves of pressure levels which have been published prove that this is the only factor involved. It is quite possible that when a large population subject to this factor is intermingled with a smaller group subject to other factors, the resulting distribution curve would be dome-shaped with some degree of skewing, depending on the relative size of the smaller group included.

This smaller group I am referring to would be one having a disorder due to a maladjustment in the regulation of blood pressure, however engendered and regardless of the homeostatic blood pressure level inherited genetically. Such a maladjustment could also lead to hypertension and hypertensive vascular disease. How this maladjustment in regulation comes about in primary hypertension is not yet established. I would like to consider in general terms how this might develop.

People may show either a normal or excessive blood pressure elevation in response to a given stressful stimulus in the environment, the response being related to a genetically inherited factor. Thus, a stimulus, *A*, in one person would cause a temporary rise of blood pressure for a period which, both as to height and duration, could be considered normal, while in another individual the same stimulus would cause an excessive rise in blood pressure for an unusually protracted time. Now, if stimulus *A* recurred frequently, or if the individual were susceptible to a wide variety of stimuli and these occurred frequently, a labile hypertension would occur such as is seen early in primary hypertension. This hypertensive response could be due to a greater vasomotor sensitivity of the smooth muscle of the blood vessels or an augmented cardiac output, or both. The blood vessel response might also mean a greater transport of electrolytes and water into the arterial wall, increasing its turgidity and decreasing its lumen. Whichever way it occurred, the decrease in the bore of the arterioles would increase the peripheral vascular resistance.

One must assume that continuation of these hypertensive episodes can lead to anatomical change in the arterioles so that their lumens remain narrow and thus lead to the fixed hypertension seen later. Add to this some new factor causing necrotizing arteriolitis in vital organs, and the stage for accelerated hypertension is at hand. While these last two stages have not been thoroughly explained, the mechanism suggested seems logical even though it is hypothetical.

Accelerated hypertension may start early in the course of hypertension, sometimes even without a period of benign hypertension. It would appear that the occurrence of accelerated hypertension is dependent upon the rate at which the blood pressure rises to its unusually high level as well as upon the height of the diastolic pressure reached. In secondary hypertension the development of accelerated hypertension is quite frequent when the initiating cause is unilateral renal vascular occlusion. Hence this possibility should be looked for in all cases of accelerated hypertension. All these facts suggest that the mechanism leading to accelerated hypertension precedes the vascular damage seen in such cases in the form of necrotizing arteriolitis. At least, the mechanisms may be considered to cause the pressure rise, the clinical deterioration and the vascular change simultaneously. Later, of course, a vicious cycle may be established which permits the hypertension and the vascular changes to augment each other.

What we must examine next and at greater length is the mechanism by which the augmented response in the blood vessels is produced. This could result from any one or a combination of the following mechanisms:

1. A greater reactivity of the vascular smooth muscles, genetic or acquired, to the same efferent nerve stimulus.

2. A greater vasoconstrictor bombardment of blood vessels via the efferent nerves. This could be caused by a different channelling of the reflex response to the same stimulus from a sensor group as a result either of central nervous system reinforcement over its pressor neurons or of a lessened simultaneous involvement of central nervous system depressor neurons, or both.

3. A greater response of the sensor to the same stimulus acting upon it. One way by which this can come about is through a change in the size of the carotid sinus (and other mechanoreceptors). It is known that the carotid sinus sensor is a stretch receptor dependent on the distortion of the sinus wall. If the size of the carotid sinus is increased, then a given change in the blood pressure will produce a greater stretch of its wall and thus a greater stimulus of the carotid sinus mechanoreceptors. Greater distensibility of the wall of the sinus independent of its size could have a similar effect.

4. A greater release of pressor hormones or a diminished production of depressor hormones. This could result either by the action of the autonomic innervation of the endocrine glands which create the hormones or by means of a more complex series of steps which, in some instances, involve the volume or composition of some of the body compartments. A variant of this view is that there may be an alteration in the rate of destruction of the released hormones with respect to the rate of their liberation. Thus, any decrease in the destruction rate of pressor hormones with respect to the rate of their liberation will have a pressor effect, and so will a decrease in the destruction rate of depressor hormones with respect to the rate of their liberation.

5. An increase in the volume of the arterial wall with a reduction in the bore of the arteries resulting from altered release of hormones which lead to an increase in their water and salt content. Actual measurements of arterial walls in established hypertension has failed to indicate any change in their water and salt content. This, however, does not preclude the occurrence of such a change earlier in the course of the disease, a change which could disappear if the water and electrolyte change stimulated connective tissue formation.

These are the most obvious mechanisms, but I am sure others may be found which may include among them the final mechanisms which will finally explain hypertension. Whatever the answer may be, it is obvious that the autonomic nervous system is involved in all of them. This is borne out practically, from the fact that the most effective therapy for hypertension—secondary, primary and accelerated—is by interference with the nervous system function, whether by the use of tranquilizers or ganglion blockers, or by sympathectomy or the administration of agents that interfere with the action of norepinephrine, the effector substance through which the sympathetic system operates. These are the "non-specific" actions which aid appropriate therapy directed at the factor which is believed to be responsible for secondary hypertension. They are employed alone when the factor causing the hypertension cannot be remedied or the condition is considered to be primary hypertension.

The role of the kidney and electrolytes in hypertension has been under discussion for several decades. What is new is the possibility of a relation between these factors and the adrenals. Recently, a prominent role has been attributed to the adrenal cortex and to aldosterone.

That the adrenals played a role in hypertension was suggested long ago. As far back as 1897, Neusser indicated that adrenal cortical tumors are associated with hypertension. This contrasts with the hypotension in Addison's disease. Even in the latter disease it has been shown that hypertension can be produced by prolonged administration of desoxycorticosterone acetate (DOCA), a temporary state which slowly disappears after DOCA is withdrawn. In the 1950's aldosterone was identified, its functions described and the disease of primary aldosteronism identified. Aldosterone was established as the mineral corticoid of the adrenal cortex.

Goldblatt found, many years ago, that adrenalectomy prevented hypertension in dogs in which the renal artery was clamped. Other investigators found that maintaining a good electrolyte balance in the experimental animal prevented the hypotensive effect of adrenalectomy in hypertension of the Goldblatt type. In rats and chickens it has been shown that DOCA, especially when given with large doses of salt, can by itself lead to hypertension.

It is clear from experimental work that the cortex contains two groups of hormones which affect blood pressure. One group represents the glucocorticoids, principally hydrocortisone, produced in the zona fasciculata, and this group is subject to control by the trophic pituitary hormone, ACTH. The other group represents the mineral corticoids, principally aldosterone, produced in the zona glomerulosa. Its formation and secretion can occur even after hypophysectomy.

Glucocorticoids produce their hypertensive effects in the animal independent of salt. The hypertension they produce is rapid in onset, mild in degree and not of the accelerated form.

The mineral corticoids, aldosterone and DOCA, require salt in most species, and usually in large amounts, to lead to experimental hypertension. The hypertension is gradual in onset and is rather severe and somewhat independent of the dose of the hormone given. The hypertension that develops is of the accelerated (malignant) form with necrotizing arteriolitis. It is associated, furthermore, with a hypokalemic alkalosis.

The possibility that aldosterone may be involved in hypertension has led recently to intensive studies concerning its regulation. To date, the following factors have been uncovered or suggested.

1. Sodium depletion stimulates aldosterone secretion.
2. Potassium excess in the body fluids has a similar effect.
3. Davis and coworkers have found that in dogs obstruction of the vena cava above the liver increases aldosterone secretion. When ascites developed in the experimental animals, a substance was found in the blood which these investigators consider a trophic hormone specific for aldosterone—aldosterone secreting hormone (ASH). This last requires confirmation.
4. Aldosterone excretion varies inversely with intravascular volume.
5. Aldosterone secretion appears to be inversely proportional to renal artery pressure but not necessarily to renal blood flow. This latter fact has resulted in a spurt of work endeavoring to relate the mechanism by which the kidney affects aldosterone secretion. All of this tends to point to the juxtaglomerular (JG) cells.

The JG cells were observed in mice by Ruyter in 1925 and in man by Obermeier in 1927. The cells are arranged concentrically around afferent renal arterioles in the immediate vicinity of the glomeruli. They contain granules which no other kidney cells possess. Goormaghtigh in 1939 found that the granularity of the JG cells increases in renal ischemia and assigned a secretory function to them, namely the secretion of renin, which had long been known as a product of the kidney. This has been confirmed since then. Hartcroft demonstrated a parallelism between the pressor activity of saline extracts of the kidney and JG cell granularity. Dean and Masson in 1951 found that injection of kidney extracts at the time of high granularity of the JG cells causes hypertrophy of the zona glomerulosa of the adrenal cortex. Since then it has been established that the degree of granularity of the JG cells and the role of renal secretion of renin are affected in a fashion parallel to the formation of aldosterone by the factors I enumerated earlier.

Sodium-deficient diets in rats, for example, cause hyperplasia and hypergranulation of the JG cells at the same time that the zona glomerulosa of the adrenal cortex is widened (up to eight fold) and aldosterone secretion is augmented. Laragh found the effect of potassium in the body fluids to be opposite to that of sodium on the JG cells. Davis showed that nephrectomy abolished the effect of vena cava occlusion upon aldosterone secretion, and so it did upon the aldosterone secretion accompanying acute hemorrhage.

The granularity of the JG cells has been found by many investigators, notably Schloss, Hartcroft and Tobian, to depend inversely upon the pressure existing in the afferent arterioles of the glomeruli. The mechanism, it seems, is that renin is released, which in turn liberates angiotensin from a plasma globulin. Hartcroft showed that the JG cell action can be affected also by renal tissue pressure following ureteral ligation. JG cell granulation is increased by adrenalectomy and this increase can be reversed by DOCA or aldosterone administration.

Thus, there is considerable evidence of a renal-adrenal cortex interrelationship. Does this mean that such a relationship involving renin-angiotensin-aldosterone is responsible for human hypertension? Genest has postulated that primary hypertension is due to a persistent low-grade hyperaldosterone secretion. But this is not proven. Several facts speak against it. Aldosterone excretion is persistently elevated in normal pregnancy in which no hypertension is present, and the rate of excretion is of the same order as in toxemia of pregnancy with hypertension. Laragh has found that the aldosterone secretion rate, measured by the isotope dilution method, is not increased in primary hypertension. Taquini noted that the renin content of the kidney and the amount of renin liberated by the kidney was normal in hypertension. And this has been found to be true for angiotensin as well. Examination of the adrenal cortex in primary hypertension has failed to demonstrate any change in the zona glomerulosa although a change might be expected if aldosterone secretion were altered.

In accelerated hypertension the situation is different. Here the JG cells are hyperactive and so is the zona glomerulosa. There is evidence of increased renin from the kidney, blood angiotensin content is augmented and an increased aldosterone secretion can be demonstrated. Even so, this does not prove that these are *causes* of accelerated hypertension at least as far as aldosterone is concerned. It is possible that the renin-angiotensin mechanism operates in other ways not involving aldosterone.

Aldosterone secretion is elevated in many conditions without hypertension, notably in the edematous states associated with cirrhosis of the liver, nephrosis and congestive heart failure. Even in primary aldosteronism there are a number of cases with only minimal blood pressure elevation. In this disease, the characteristics are hypernatremia, hypopotassemia and hypervolumia. Adrenalectomy has been curative in primary aldosteronism but had little effect on accelerated hypertension.

The fact that protracted administration of DOCA and salt was found (by S. M. Friedman and associates) to cause irreversible hypertension in animals—so-called metacorticoid hypertension—is not surprising since any form of experimental hypertension becomes permanent when protracted enough. It cannot be used to prove that *this* form is the form leading to primary hypertension, although it may very well be one of several forms that may do so. What bearing the recent work of Skelton on "adrenal-regeneration hypertension" has on the genesis of primary hypertension is still undetermined. It is a lead that warrants further investigation.

What does the future hold? It is hazardous to speculate as to the direction of profitable future studies but I will attempt it so as to round out the presentation. It is my view that more profit will ensue from the study of genetic factors and of the integrative role of the nervous system than from continued excessive concern with the adrenal-electrolyte-renal mechanisms. It is in the former areas that I predict new and exciting findings in the next few years that will shed considerable light upon primary hypertension. I stress this here because new knowledge about the pathogenesis of primary hypertension will go far to improve the rational management of hypertensive vascular disease and will lead ultimately to its prevention.

Michael Reese Hospital and Medical Center, Chicago 16.

YES ON 22

Drug Therapy of Hypertension

ROBERT F. MARONDE, *M.D.*, and L. JULIAN HAYWOOD, *M.D.*, Los Angeles

• Drug therapy can lower the blood pressure levels of most hypertensive patients. The agents now in use are usually better tolerated and more effective than many of those available a few years ago. It seems probable that there is a close relationship between the elevated blood pressure and the increased mortality rate of hypertensive persons and that a significant lowering of this pressure would result in a decrease in mortality.

In a pertinent study, the average pre-treatment blood pressure of a group of 76 patients with moderate to severe hypertension was 198/119 mm. of mercury in the prone position and 192/118 in the standing position. The patients were treated for a two-year period and with treatment their average pressure over a nine-month period was 164/99 mm. prone and 142/94 mm. standing.

Many drugs used for the treatment of high blood pressure have more effect on the lowering of this pressure when the patient is in the standing position. For this reason, the blood pressure, while the patient is standing, should be used as the guide for dosage of these drugs.

In GENERAL, mortality in hypertension increases in parallel with the blood pressure level.[2,3,9,10] Therefore, any procedure that results in a significant decrease of the hypertension, without concomitant complications that would offset the benefit derived from this decrease in pressure, should lower the death rate. Several investigators have reported that this has been achieved by drug therapy.* A majority of the patients dealt with in these reports had grade III or IV Keith-Wagner hypertensive retinopathy. In contrast, one hundred patients treated by thoracolumbar sympathectomy and 28 patients treated with drug therapy were studied by the use of matched controls and no decrease in mortality was found.[7,14] In the series dealing with thoracolumbar sympathectomy, data were presented which made it possible to compare the blood pressure levels of the treated and control patients after a ten-year period. Analysis of these data demonstrated that there was no significant difference in average pressure between the two groups. Data by which a similar comparison could be made between the drug-treated group and their controls were not presented.

A definite improvement in the degree of control of the blood pressure as well as a decrease in the side effects from antihypertensive drugs has, in our opinion, occurred within the past two years. It is the purpose of this report to demonstrate the degree of control of the blood pressure of hypertensive patients treated as outpatients.

METHODS

All patients who attended the hypertension clinic of the Los Angeles County General Hospital in the period of January to April 1960 were selected for this study. In January 1962, patients who were lost from the clinic during this period were traced. In those patients who were still under observation, the average supine and standing blood pressures for the period of January to October 1961 were compared with control† pressures and with pressures recorded during previous treatment.

Clinic visits were every two weeks, and three observers measured the supine, sitting and standing pressures. Each observer was responsible for an entire visit. Therefore, one observer measured the blood pressure of an individual patient every six weeks. Comparison of the average pressure readings of each observer with the readings of both the others were made and no significant differences for the same group of patients was found.[13] During one period in 1959 and again late in 1961 therapy was stopped in over 40 patients for four to six weeks in preparation for evaluation of new antihypertensive agents. In both instances the average pressure of the patients at the end of these periods did not differ significantly from the control pressures that had been obtained when they first entered the clinic.[11,13] This was true even though a satisfactory response to other antihypertensive agents had been noted for several months. Most of these patients were included in the present study. Under the conditions outlined, we concluded that it was valid to compare the blood pressure levels during the treat-

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Presented as part of a Panel on New Approaches to Diagnosis and Treatment of Hypertension at the 2nd General Meeting at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

*References 1, 4, 6, 8, 15, 16, 17.

†When the patient was first referred to the clinic, control blood pressures were obtained by stopping medication for a period of six to ten weeks, except for patients with active grade III or IV Keith-Wagner hypertensive retinopathy, whose control pressures were obtained from the hospital records.

ment period with the control pressures even though these control levels were obtained at a time that preceded the treatment period.

Our sequence of treatment was: (1) reserpine or a thiazide diuretic; (2) reserpine plus a thiazide drug; (3) a thiazide plus guanethidine, and (4) guanethidine and a thiazide plus reserpine. Supplemental potassium was usually given with the thiazides. The stages in this sequence were separated by approximately six weeks and progression of one schedule to the next was carried out if it was believed that a satisfactory response had not taken place (diastolic pressure of 100 mm. of mercury or below). Guanethidine and a thiazide were given concomitantly because of the more pronounced effect on the supine pressure as compared with the use of guanethidine alone.[12]

RESULTS

A total of 137 patients were seen in the clinic during the period January to April 1960. Twenty-eight were new patients who were not subsequently treated because they had only mild or labile or systolic hypertension or because they were financially ineligible and were referred to private care. Two additional patients were referred to the hospital at the time of their first visit because of malignant hypertension. Of the remaining 107 patients, 24 were treated but then were lost from the clinic during the period January 1960 to January 1962. All were traced and found to be alive. Twelve were under the care of other physicians or were receiving no therapy. Three of the 24 patients were invalids as the result of cerebral vascular thrombosis or hemorrhage. Another of the group of 24 was in hospital as the result of a traffic accident and still another was in hospital because of renal disease which antedated his first clinic visit. Seven patients of the 24 had been referred to the general medical clinic because of mild or labile hypertension or because of inability to cooperate with or understand the treatment program. There were seven deaths in the 107 patients, three from cerebral vascular disease, two from uremia, one from carcinoma and one from cirrhosis of the liver.

Seventy-six patients were treated and still were under observation in the clinic in January 1962. The average age of this group was 51 years. Sixty-three were Negroes and 60 of the 76 were women. Forty-one had electrocardiographic evidence of left ventricular hypertrophy and 17 were taking digitalis. There were eight with serum urea nitrogen above 25 mg. per 100 cc., and eight patients had grade III or IV Keith-Wagner retinopathy. Eight new patients were accepted for treatment between January and April 1961.

Compilations were made of the average blood pressures of the 68 patients of this group of 76 who were attending the clinic before January 1960. The three-month period preceding January 1960 was selected for this purpose. At that time 30 patients were taking a ganglion-blocking agent plus reserpine and/or a thiazide diuretic. The average pressure for the group was 190/116 mm. of mercury supine and 178/102 standing. Thirty-eight patients received a thiazide and usually reserpine but no blocking agent during the three-month interval. Their average pressures were 172/108 supine and 165/105 standing. It should be noted that many in this group had previously been given ganglion-blocking agents but were unable to tolerate them because of side effects.

In the period January to October 1961, 12 of the 76 patients received only a thiazide diuretic. Their average pressures were 142/92 mm. supine and 136/93 standing as compared with control levels of 180/111 supine and 177/111 standing. Twenty-four patients were treated with a thiazide and reserpine. The average treatment pressures were 157/93 supine and 134/90 standing while the respective control pressures were 194/116 and 188/112. Two patients in this treatment group were unable to tolerate any other antihypertensive agents because of side effects, and their blood pressure control was not adequate. Twenty-one patients were treated with guanethidine and a thiazide. Their average pressures during treatment were 173/102 and 147/94, supine and standing, and their control blood pressures were 204/122 supine and 197/122 standing.

A group of nine more severely ill patients, three of whom had serum urea nitrogen above 30 mg. per 100 cc. and another two with grade III or IV Keith-Wagner retinopathy, were treated with guanethidine and a thiazide plus reserpine. Their control pressures were 208/126 supine and 203/130 standing. The comparable averages during treatment were 184/113 and 160/104. The fact that three antihypertensive agents were used in the treatment of the patients of this group indicates a resistance to therapy (see foregoing description of *methods*). Two of this group of nine patients were unable to tolerate effective doses of guanethidine because of the side effects.

Four patients were treated with reserpine only. Three of them had previously required a blocking agent for a prolonged period to control their blood pressure. It is not frequent, in our experience, that dosages of antihypertensive agents may be greatly reduced once blood pressure control has occurred.

Six patients who were treated with mecamylamine or hydralazine complete the total of 76 patients. The four who received mecamylamine had had adequate control of pressure before January 1960 and their therapy was not changed. The two patients taking hydralazine could not tolerate guanethidine or ganglion-blocking agents, one because of side effects, the other because of increased elevation of serum urea nitrogen. Neither of these latter patients had a significant change in pressure levels.

DISCUSSION

The patients presented here are not a representative sample of the hypertensive population. This is evident by the preponderance of Negroes, the high average blood pressures and the frequency of the electrocardiographic finding of left ventricular hypertrophy. Mortality statistics pertaining to a group of this type are not available but undoubtedly the mortality rate for them would exceed that of the hypertensive population as a whole.

Eight patients of this group had a disappearance of their electrocardiographic abnormalities. No deaths resulted from cardiac decompensation. This is of interest since this has been the cause of approximately 60 per cent of hypertensive deaths.[5] This probable decrease in the incidence of death from hypertensive heart disease is in accord with the report of Sokolow and Perloff.[17] Whether or not drug therapy has influenced the incidence of cerebral vascular lesions or nephrosclerosis is not apparent from the present study. Of the three patients who had non-fatal cerebral vascular episodes all had a poor blood pressure response with antihypertensive agents. However, in two of the three fatal cases of cerebral vascular lesions the blood pressure response to drug therapy had been considered adequate. The 11 patients with serum urea nitrogen levels above 25 mg. per 100 cc. all had evidence of renal disease at the time of their first clinic visit. No real change in these levels occurred in the eight surviving patients during this period of observation. The three patients who died of renal disease came to the clinic with serum urea nitrogen greater than 50 mg. per 100 cc.

Our treatment schedule at present has been slightly modified. Therapy is started with a thiazide and not reserpine. Using the double-blind technique, we were able to demonstrate a slight effect on only the standing diastolic pressure but no effect on the supine pressure or standing systolic pressure when 0.5 mg. of reserpine per day was given over a 12-week period.[13] Other investigators using a similar technique had previously demonstrated that no statistically significant blood pressure change resulted from reserpine by mouth when it was the sole therapeutic agent.[18]

CONCLUSIONS

Drug therapy can lower the blood pressure levels of hypertensive patients in the majority of cases. The agents now in use are usually better tolerated and more effective than many of those available a few years ago. It would be difficult to believe that a close relationship between the elevated blood pressure and the increased mortality rate of hypertensives did not exist and that a significant lowering of this pressure would not result in a decrease in this mortality rate.

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YES on 22

Initial Care of Acute Back Injuries

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• The mechanism of injury to the back should be obtained with the utmost accuracy and set down in the history as a separate paragraph under that heading. This is usually best obtained by questioning and requestioning the patient during the course of the examination. A history of any previous back affections should also be obtained at the first visit.

The detailed examination of the back is not complete without a general physical examination.

X-ray studies should be done immediately in all cases in which the injury has been caused by direct violence or forceful indirect violence (as in "jackknife" injury).

Terms such as "disc disease," "ruptured intervertebral disc" and various others that convey a similar meaning should not be used as the initial diagnosis and should be withheld until such a diagnosis is definitely established.

The plan of treatment may include a period in hospital or of rest at home, or it may be carried out with the patient ambulatory. Corsets and braces should be prescribed only when they are to serve a definite function and the same can be said of physiotherapy.

In DEALING with acute injuries to the back, the first examination should be made with the patient completely undressed. If pain is so severe that he cannot be undressed at once, he should be put in hospital and as complete an examination as possible should be made with the patient recumbent. Even with this disadvantage an evaluation of muscle spasm, areas of localized tenderness, leg signs, reflexes and sensation can be made. No back examination is complete without a physical examination, which should include rectal and pelvic examination. The survey of the lower extremities should take note of the arterial pulsations and the movements of the feet. The habitual use of a mimeographed sheet for routine examination of the back and extremities expedites making the necessary notations and becomes an important initial part of the patient's permanent record. The examination should at least include the following:

1. Posture
2. Gait
3. Level shoulders
4. Level iliac crests
5. Pain
6. Tenderness
7. Muscle spasm
8. Neck flexion
9. Cough
10. Forward flexion
    a. Standing
    b. Sitting
11. Extension
12. Lateral flexion
13. Rotation
14. Straight leg raising
15. Lasegue sign
16. Knee jerks
17. Ankle jerks
18. Babinski sign
19. Muscle weakness
20. Sensation
21. Leg length
22. Circumference:
    a. Thigh
    b. Calf
23. Knees
24. Ankles
25. Feet
26. Pedal pulses

It is extremely important to determine the exact mechanism of injury and the history of previous back affections at the first visit. These facts are ideally ascertained from the patient during the course of the examination. The examiner should learn the stress that was involved in producing the pain. If the injury was incurred in lifting a weight, he should know the approximate weight of the lift, its duration, the position of the patient (awkward or natural), the shape and size of the object lifted. He should get as clear a picture as possible of the forces that were involved during the stress and the planes in which they were involved. He should find out whether the task which brought on the symptoms was routine or extraordinary and whether the patient was accustomed to the type of work or whether it was unusual.

Part of the immediate and later prognosis depends on these facts, just as the initial period of unconsciousness is important in judging the severity of a head injury. This information is often of inestimable value in later separating the real from the unreal symptoms. It should be included in any report under a caption "Mechanism of Injury."

The details of previous back injuries or affections will only be gleaned by persistent probing on the part of the examiner. Serving as reminders to forgetful patients are the questions: "Have you ever been in a hospital?" . . . "How many times?" . . . "Reason?" . . .

X-ray films should be taken immediately in all cases in which the injury has been caused by direct violence or by forceful indirect violence as in "jackknife" injury. It is advisable in such cases that the attending physician be present in the x-ray department to assist the technicians in positioning the patient. It should be his aim to obtain the maximum information with the least disturbance of the patient.

Presented as part of a Symposium on The Back before a joint meeting of the Sections on General Practice and Physical Medicine and Industrial Medicine and Surgery at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

In other cases of acutely painful back injuries, x-ray studies may be deferred until severe pain has subsided. Routine laboratory work should include a determination of the blood sedimentation rate and often uric acid determination.

DIAGNOSIS

There is no term which satisfactorily describes the lower back syndrome. "Sprain, lower back" has become a universal term which, although it means many different things to many different people, is perhaps the best general epithet for the condition. "Disc disease," "ruptured intervertebral disc" and the various other terms which convey a similar meaning should not be used as the initial diagnosis and should be withheld until such a diagnosis is definitely established. If there are clinical signs of nerve involvement an acceptable diagnosis is "Sprain, lower back with nerve root involvement." The diagnosis should also include the evidence of preexisting disease. For example: "Sprain, lower back—hypertrophic osteoarthritis preexistent."

TREATMENT

After completion of the initial survey the examiner must then decide upon a plan of treatment. In general there are three choices—to put the patient in hospital, to prescribe rest at home or to treat him while ambulatory.

In Hospital

If the back is acutely painful with severe muscle spasm and a list, the patient does best with immediate admittance to hospital, bed rest in a proper contour position and use of analgesics and moderate heat. When the acute phase has subsided the application of bilateral leg or pelvic traction helps to keep the patient at rest in bed. Ordinarily traction is kept in place for ten to twelve days, but for a shorter time if the patient can perform all bed exercises without pain. Results of the use of muscle relaxant drugs have at best been questionable in the cases in which I have used them, although in a few cases in which they were given intravenously the response was dramatic. Sometimes, however, relapse quickly followed.

Rest at Home

Rest at home should be allowed only under the most ideal conditions. For the most part it is more or less a delusion on the part of the patient and the physician.

Ambulatory

Ambulatory treatment is reserved for cases of minor affections in which more definitive treatment seems not to be warranted.

Persistent painful trigger points should be injected with procaine and hydrocortone.

Obvious foot conditions which could interfere with proper weight bearing should be corrected.

If the patient is to be given physiotherapy a definite course of treatments should be laid out, with an estimate made of expected results and a time limit set for accomplishing them. However, there should be no limit set on the duration of each treatment period or on the time that the patient will be confined to the physiotherapy department. The usual half-hour period allotted for physiotherapy treatments has no logical basis. The lazy and uncooperative patient may require sessions two or three or four times longer than his opposite. The uncooperative patient should be taught that if he protests fatigue, the exercises will be interrupted for rest periods, not ended; the scheduled exercises will be resumed after a rest, and carried on until completed, no matter how long it takes.

If the results from physiotherapy that were estimated at the outset are not accomplished after the prescribed set course, then the treatment should be reviewed by the physician and the physiotherapist.

A physiotherapy regimen not augmented by a definite exercise schedule that the patient must follow at home is, to say the least, incomplete. The patient should be carefully instructed in the regimen that he is to follow at home and he should be repeatedly quizzed as to what he is doing and how he is doing it so that one may be sure that the patient understands the importance of the therapy.

An intelligent patient will find the pamphlet *"Care of the Back"*[1] helpful. The patient's complete cooperation is mandatory; without it, physiotherapy cannot be effective. If the patient's condition is not somewhat improved after three to five consecutive physiotherapy treatments, this method probably will not be effective and should be stopped.

The use of corsets and braces should be decided upon during the course of physiotherapy. The patient should be weaned from them as soon as they have served their purpose and should not be allowed to become dependent upon them unless they are needed.

Consultation is desirable within the first two weeks in cases in which the patients are not showing satisfactory progress and in those in which the objective findings cannot be coordinated consistently with the complaints. The attending physician should decide what he hopes to gain from consultation and select the consultant. When the objective findings and the complaints do not coincide, consultation should be called if only to substantiate the attending physician's findings.

PROGNOSIS

Prognosis as to time of recovery in this injury is indefinite. It is fair to state that usually if back pain ostensibly resulting from relatively minor stresses and strains continues for a long time, some other underlying pathologic condition is a probability. Almost every case is complicated by multiple divergent factors in addition to the obvious psychosomatic status. To indicate just a few:

What is the employer-employee relationship?

Will the employer permit the patient to return to modified work for two to three weeks until he regains his strength and confidence?

Is he a long-time, useful, trusted employee or was he new to the job when he was injured?

Is there a wide spread between the patient's working earnings and his disability payments?

What are the patient's financial needs?

Has he approached retirement age?

These and many other issues surround almost every prognosis.

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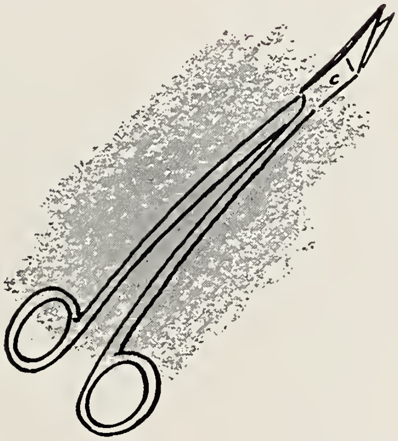
YES ON 22



Anxiety and Worry as Aspects of Normal Behavior

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• Anxiety and worry are not necessarily psychopathological reactions. Anxiety is a basic physiological and affective response to the perception of danger. Worry is an effort to deal with the perceived threat at an intellectual level. Realistic anxiety and worry, based on objective and realistic dangers, should be distinguished from neurotic anxieties and worries.

Within certain limits realistic anxiety and worry are useful adaptive mechanisms which enable a person to cope more effectively with anticipated dangers. Excessive anxiety and worry, however, or the absence of these reactions in circumstances where they would be appropriate, both tend to lead to maladaptive responses. These considerations have certain useful implications in medicine, notably in the preparation of patients for surgical operation.

ONE OF THE COMMONEST misconceptions about human behavior is that anxiety and worry are always abnormal. "How to Get Rid of Anxiety," or "How to Stop Worrying" are favorite topics in the countless self-help books, magazine articles and newspaper columns which constantly exhort the American public on the means of achieving a better life. It is an extraordinary fact that even the psychiatric and psychological professions, which should know better, have done almost nothing to dispel this misconception and, indeed, in many instances have contributed to its perpetuation.

The purpose of this communication is to review briefly a few ideas about the nature of anxiety and worry, and to indicate that within certain limits these phenomena are significant and essential aspects of normal human behavior. Let us begin with some basic definitions.

One of the fundamental principles which underlie all human activity is the need of the organism to maintain homeostasis with regard to both its internal and its external environment. When homeostatic control is threatened, the organism is mobilized into adaptive efforts at regaining control. Anxiety refers to the *signal* of present or future danger with which the ego seeks to mobilize all the organism's resources in the interests of defense, self-preservation or the restoration of homeostasis.

The differentiation between anxiety and fear has been a source of frequent discussion in the psychiatric literature, and there is no uniform agreement about it. In general, the term *fear* is used to refer to reactions to known, tangible and objective dangers, while the term *anxiety* is reserved for reactions to unknown, intangible and subjective ones. Fear, moreover, most often refers to present dangers, while anxiety is more apt to refer to anticipated or future ones. Actually, a sharp line of distinction between them is not always possible even on the basis of the above criteria. Physiologically, moreover, there is no difference between fear and anxiety. In both, the organism mobilizes the same autonomic and humoral resources to facilitate either "fight or flight."

Although laymen often use the terms *anxiety* and *worry* interchangeably, in actuality they represent quite different orders of responses to danger. Anxiety is a primitive, basic, physiological and affective response to the perception of danger. Worry, on the other hand, can be characterized as a kind of apprehensive thought which is mobilized by anxiety, and which represents an effort on the part of the organism to cope with the anticipated danger.[2] Anxiety is an emotional signal, an alerting mechanism. Worry is a form of mental activity, an effort at problem-solving. It must be emphasized, however, that although worry differs in nature from anxiety, it never exists without anxiety. The mental work of worry is always triggered by and associated with underlying feelings of anxiety. It is undoubtedly for this reason that they are so often confused with one another.

Let us now return to our topic of anxiety and worry as aspects of normal human behavior.

Anxiety can be conceived of as being at the end of a long evolutionary chain which goes all the way back to protoplasmic irritability and animal vigilance. As a psychological reaction it is comparable to its physiological analogue, the sensation of pain. Both are signals to the organism that something is threatening its integrity, and both are essential alerting mechanisms which enable the organism to make the proper adaptive responses. Just as an individual lacking the capacity to feel pain would be seriously handicapped, so also would be an individual who was incapable of reacting with anxiety. On the other hand, if too much pain is present, it can actually interfere with the organism's ability to deal

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Presented at the Symposium on "Management of Anxiety for the General Practitioner," held February 24 and 25, 1962, at the Los Angeles County Hospital, Los Angeles 33.

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Submitted June 27, 1962.

with the noxious stimuli. Thus, what normally serves as an essential protective device can, if it becomes excessive, act as a destructive influence or a kind of disease in itself. The same is true of anxiety. In mild or moderate form it acts as a constructive force, spurring the ego on to make adaptive attempts at mastering the actual or potential threat to its safety. Thus, moderate anxiety has been shown to facilitate learning. If the ego's efforts at mastery fail, however, then the anxiety increases to a point where it in itself becomes a handicap to the ego's adaptive efforts. In extreme form, anxiety may cause total disorganization or paralysis of ego activity. We see examples of this in panic reactions, in agitated depressions, and in catatonic excitements. Examples of the pathological absence of anxiety can be seen in "la belle indifference" of the classical hysteric, in the flattened emotions of the hebephrenic, and in the apathetic reactions of certain psychotic depressives. We also see it in everyday life in the reaction of *denial*, in which a person represses or denies the existence of a threat—a kind of psychological equivalent of the ostrich's supposed act of burying its head in the sand when threatened. We shall have more to say about this mechanism later on.

Even moderate anxiety can be pathological if its real sources are repressed and unconscious. Such anxiety appears in the form of so-called "free-floating anxiety" or "nameless dread" with which the ego is powerless to cope since it is unable to identify the repressed threat which is provoking the anxiety. Similarly, when the anxiety is displaced from its real origins to some substitutive object, as in the phobias, the ego is also unable to effectively cope with the repressed threat. In normal anxiety, however, the threat, whether immediate or anticipated, is realistic and conscious, and the ego is mobilized into efforts at preparing for it or coping with it.

REALISTIC WORRY

Worry represents such a coping effort at the intellectual level. Realistic worry is based on realistic anxiety—that is, it is related to realistic danger, immediate or anticipated. Although at times it may at first glance seem to be related to a past traumatic experience, closer analysis will usually indicate that what the worried ego is struggling with are the present or future consequences of the experience. Thus a student who is worrying about having failed an important examination is really concerned with what is going to happen to him as a consequence of the failure.

Successful worry leads either to action designed to cope with or eliminate the threat which has provoked the underlying anxiety, or else to a new homeostatic equilibrium in which the individual intellectually adapts to the threat and is able to live without being distressed by it any longer. An example of the first reaction would be the student whose worry over his poor showing in an examination spurs him into harder and more effective study to compensate for his poor grade. An example of the second reaction would be the student who finally makes his peace with the fact that he is not going to be an outstanding scholar and sets his sights more realistically.

NORMAL ANXIETY USEFUL IN MEDICINE

Normal anxiety and worry have special significance in medicine and surgery. Preventive medicine rests on a foundation of realistic anxiety and anticipatory concern. Without it, people would be less likely to undergo prophylactic inoculations and periodic health examinations, or to watch their diets, or to give up any immediate pleasures in the interest of a long-range health program.

In surgery the problems of realistic anxiety and worry have a particular importance. Internists and surgeons have long been aware that the mental attitude of a patient about to undergo a serious operation seems to have a significant effect not only on the postoperative course but even upon his ability to tolerate the surgical procedure itself. This has led to efforts at preoperative "psychic buffering," particularly in the form of the routine administration of barbiturates on the night before operation. On the purely psychological level, surgeons generally try to cope with the patient's anxieties by administering liberal doses of reassurance, or by minimizing the seriousness of the imminent procedure: "Don't worry about a thing—just leave the worrying to me," or "It's nothing at all—you'll be up and walking around in three or four days."

The underlying assumption in these approaches is that it is bad for the patient to be worrying about the anticipated operation. On the other hand, if what I indicated in earlier paragraphs has any validity, the conclusion seems justified that it would be just as unhealthy for a patient not to worry at all about a serious surgical procedure as it would be for him to worry too much. A number of studies have been done in recent years which indicate precisely this. One of these studies, by Janis of Yale University,[1] is particularly pertinent. Janis studied a group of 23 patients before and after their undergoing major surgical operation and found that they fell into three broad groupings, according to their anxiety levels:

1. Patients with extremely high preoperative anxiety, who were constantly worried and agitated, could not sleep and could not be reassured. Their

excessive fears of body damage were linked with many clinical signs of chronic neurotic disturbances which could be traced back to early life experience. Patients in this group were more likely than the others to show excessive anxiety postoperatively also.

2. Patients with moderate anticipatory anxiety, who were occasionally tense or agitated and worried about specific features of the operative procedure or anesthesia, but who tended to be relieved when given authoritative reassurance. Patients in this group were significantly less likely than the others to have postoperative emotional disturbances.

3. Patients with little or no anticipatory anxiety, who were constantly cheerful and optimistic, denied any concern or worry, slept well and showed no observable evidences of tension. Patients in this group were more likely than the others to display postoperative reactions of intense resentment and irritability.

CONSTRUCTIVE WORRY

These and similar observations confirm the proposition that a moderate amount of anxiety and worry over an anticipated real trauma is normal and enables a person more effectively to cope psychologically with the traumatic experience. This is important in helping us to know what kind of psychological communications we can make to patients to help them in their coping efforts—to help them worry constructively, so to speak. Thus it is not helpful to a patient to be told he is not going to experience any pain or other difficulties if in fact he is. It is far better to give him a reasonable idea of what he can expect as well as what will be done to help him. The anticipatory anxiety which he thus experiences enables him to be better prepared psychologically to cope with the difficulties when they do occur. On the other hand, if an individual fails to do this "work of worry" in response to an anticipated danger, and instead falls back on the mechanism of denial, this defense will tend to break down when the danger or suffering actually occurs, and intense feelings of helplessness, panic or rage then tend to ensue.[3]

This is one of the reasons, incidentally, why unexpected traumas are much more apt to cause emotional disturbances than are expected ones. In the former there is no opportunity for realistic anticipatory anxiety and worry on the part of the ego which would enable it to prepare its defenses for the danger when it arrives.

In conclusion, a question may properly be asked as to the practical significance of recognizing that realistic anxiety and worry are aspects of normal, indeed healthy, human behavior. My reply would be that such recognition not only may lead to the elimination of unwarranted feelings of guilt and self-depreciation in people, but also to more therapeutic psychological attitudes and communications on the part of physicians or other authority figures toward people with such anxiety. We had a dramatic verification of this on a large scale in the experiences of the past two World Wars. The recognition and teaching that fear is a normal human reaction under conditions of danger was of enormous help in maintaining the morale of many soldiers in World War II, who were thus relieved of the enormous additional burden of guilt and social condemnation which their predecessors in World War I experienced when they felt afraid. By the same token, I believe that the misconception that worry of any kind is abnormal is responsible for widespread tension in many intrapersonal and interpersonal situations. Many people are apparently unaware of the fact that to be unworried in the face of a threatening reality situation may be a sign of mental disorder rather than of mental health.

This also has implications in relationship to the prescription of tranquillizing drugs. Without in any way minimizing the invaluable contribution which these drugs have made in the management of severe mental illness, it is important to recognize that their use is logically indicated only where there is excessive anxiety, not realistic anxiety. To block out a patient's realistic anxiety would be to deprive him of an essential part of his adaptive apparatus. Where real problems exist, the task of the physician, whenever possible, is to help the patient face these problems objectively and cope with them constructively. The difference between mental health and neurosis lies not in the absence of problems but in the ego resources which a person is able to bring to bear on the problems which always exist; not in the absence of anxiety, worry or grief, but in whether or not these reactions have a realistic basis and whether or not they ultimately lead to constructive coping activity on the part of the human organism.

HEALTH AND HAPPINESS NOT SYNONYMOUS

All too often psychiatric patients have the illusion that mental health and happiness are synonymous, and that when they are "cured" they will "live happily ever after." Obviously even the most successful psychotherapeutic procedure cannot guarantee happiness for anyone. The world in which we live presents us with a continuous succession of real problems and difficulties. Even if our personal lives are momentarily free from stress, the world at large never is. We would be less than healthy if we did not all share some concern about, for example, the current state of our planet.

One of the challenges which confront modern man, probably more than any of his forebears, is the necessity of living with continuous uncertainty and tension. Shorn of his belief in his immortality, shaken in his faith in a personal and protective God, faced with the prospect of living on the brink of nuclear extinction for an indefinite time to come, modern man cannot but live in a state of constant "existential" anxiety. This is part of the price we pay for being human, but it is a price worth paying for the freedom that comes with self-awareness.

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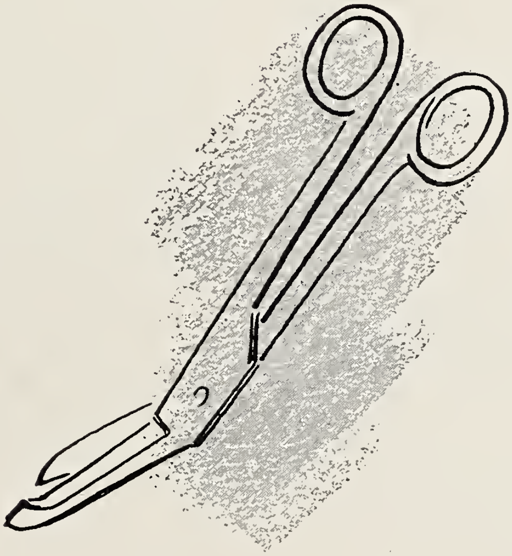
YES ON 22



Repair of Vesico-Vaginal Fistula

EDWARD C. HILL, *M.D.*, San Francisco

• **One hundred and thirteen patients with vesico-vaginal fistula were seen at the University of California Hospital from 1932 through 1959. The most common cause of fistula was trauma associated with pelvic operation, and the operation most often involved was total abdominal hysterectomy. Malignant disease of the pelvic organs was the second most common cause, while radiation therapy and obstetrical causes were next in the order of frequency.**

Three fistulas healed spontaneously. Twelve bladder by-pass operations were done and 54 repairs were carried out in 46 patients. Thirty-eight patients (82.6 per cent) were cured after one or more repair operations. A variety of operative approaches were used, selected in accordance with the needs of the individual case. Bladder distention postoperatively, due to a plugged catheter, was held responsible for failure of the repair in three cases, and this complication was considered preventable.

Close attention to surgical technique, the recognition of bladder injury, and proper repair at the time of operation are prime factors in the prevention of vesico-vaginal fistula.

THE FOUNDATION of gynecologic practice, as it is known today, was laid on the cornerstone of a technique for the almost uniformly successful repair of vesico-vaginal fistulas. Over a hundred years ago, Sims[9] reported an 83 per cent cure rate in a series of 261 cases. In Sims' day, more than 85 per cent of fistulas were obstetrical in origin—most of them resulting from pressure necrosis of the bladder wall secondary to impacted fetal heads in bony dystocia problems. Few of them were due to traumatic delivery methods. Today, with early recognition of cephalopelvic disproportion and the increasing use of cesarean section, the incidence of vesico-vaginal fistulas of obstetrical origin has been sharply reduced.

It is well recognized that the most common cause of vesico-vaginal fistulas today is gynecological surgical operation.[1,3,6] That the impetus for the development of modern pelvic operations should have been a condition which is now frequently the result of such operations is an unfortunate medical paradox. Because of this, it is considered important to: (1) note the incidence of vesico-vaginal fistulas in a modern hospital setting; (2) determine the causes; (3) suggest methods for avoiding bladder injury at the time of operation; and (4) review the results that have been obtained with various surgical techniques for the repair of these fistulas.

MATERIALS AND METHODS

This study represents a review of the case histories of 113 patients admitted to or discharged from the University of California Hospital, with a diagnosis of vesico-vaginal fistulas, from 1932 through 1959. Many of these patients were referred from areas throughout Northern California, although approximately 15 per cent of the fistulas occurred as a result of procedures carried out at U. C. Hospital, primarily in the treatment of pelvic malignant disease.

The causes of these fistulas were analyzed and the methods of management were reviewed. Particular attention was paid to those patients in whom surgical repair of the fistula was carried out, and an attempt was made to determine the factors responsible for failure of repair.

FINDINGS

Etiology. Of the 113 cases of vesico-vaginal fistulas studied, 51 (46 per cent) were the result of pelvic operation and 31 of these were associated with total abdominal hysterectomy. The second most common operation associated with fistula was radical hysterectomy for malignant disease, and in the remainder of cases the lesions were related to other procedures in the pelvis, both abdominal and vaginal (Table 1).

Malignant disease involving the genito-urinary tract accounted for 38 (34 per cent) of the fistulas, while radiation therapy for malignant disease was held responsible in 11 (10 per cent). There were 11 patients (10 per cent) with fistulas of obstetrical origin, and in ten of them the lesion was associated with difficult forceps delivery. In only one did fistula occur following delivery by cesarean section.

Management. Three of the fistulas healed spontaneously, one of them being an obstetrical fistula,

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Presented before the Section on Obstetrics and Gynecology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

TABLE 1.—*Causes of Vesico-Vaginal Fistulas, U. C. Hospital 1932-1959*

Cause	No. of Cases	Per Cent
SURGICAL OPERATION	51	45.2
Abdominal total hysterectomy	31	
Radical (Werthcim) hystcrectomy	11	
Vaginal repair	2	
Vaginal hystcrectomy	1	
Abdominal subtotal hysterectomy	1	
Abdominal cervicectomy (stump)	1	
Miscellaneous procedures	4	
MALIGNANT DISEASE	38	33.6
RADIATION THERAPY	11	9.7
OBSTETRICAL	11	9.7
Difficult forceps delivery	10	
Cesarean section	1	
OTHER CAUSES	2	1.8
Granuloma inguinale	1	
Erosion of indwelling catheter	1	
TOTAL	113	100

TABLE 2.—*Operations for Vesico-Vaginal Fistula (58 Patients, 69 Operations), U. C. Hospital, 1932-1959*

Operations	No. of Operations
REPAIRS	54
Vaginal	40
Abdominal	10
Combined	4
BLADDER BY-PASS	12
Uretero-sigmoidostomies	7
Ileal bladder substitution	5
ELECTROCOAGULATION	2
BLADDER RECONSTRUCTION	1
TOTAL	69

TABLE 3.—*Results of Vesico-Vaginal Fistula Repairs (46 Patients)*

Approach	No. of Operations	No. Cured	Per Cent
Vaginal	40	29	72.5
Abdominal	10	6	60.0
Combined	4	3	75.0
Total	54	38*	70.4

*82.6 per cent of patients cured after one or more repairs.

TABLE 4.—*Factors Contributing to Repair Failure in Vesico-Vaginal Fistula, U. C. Hospital, 1932-1959*

	No. Cases
Impaired blood supply (post Wertheim or radiation)	3
Bladder distention postoperative	3
Persistent carcinoma	2
Trauma (vaginal examination postoperative)	1
Technical difficulties in repair	1
Unknown (poor wound healing)	6
	16

while the other two were defects which occurred as a result of radical operation for malignant disease.

In 58 patients operative procedures of one kind or another were done for repair of the fistula. There were 69 operations done, most of them being designed to close the fistulous opening (Table 2). Twelve by-pass operations were carried out, seven by uretero-sigmoidostomy and five by ileal bladder substitution.

The vaginal approach, which was the one most often employed, was used in 40 instances. In six of these, the Latzko[4] technique was followed. The abdominal approach was followed in ten instances—transvesical in five, and either transperitoneal or combined transperitoneal and transvesical in five. There were four cases in which a combined transvesical and vaginal approach, according to the method of Twombly and Marshall,[10] was used. These were large fistulas associated either with impairment of blood supply, such as may occur following irradiation for malignant disease, or defects in which it was not possible to gain sufficient mobilization of tissue surrounding the fistula to effect closure without tension.

RESULTS

Thirty-eight of the 46 patients who underwent one or more surgical repairs were cured of their fistula. In general, the vaginal approach was more effective than the abdominal (Table 3). The Latzko[4] technique was particularly successful. In the six cases in which it was used the fistula was closed and no further repair was necessary.

The bladder by-pass procedures were done on patients in whom it was thought that repair of the fistula was impossible or inadvisable. In a few of these cases the indication was malignant disease involving the vesico-vaginal septum, but in several instances this operation was done after one or more attempts at repair had failed. Of the seven patients who had bilateral uretero-sigmoidostomy, two died of overwhelming pyelonephritis in the immediate postoperative period. Subsequently five ileal bladder substitution operations were done without that problem arising.

Factors Contributing to Repair Failure. An attempt was made to assign factors which were considered partially or completely responsible for failure of repair in the 16 operations that were unsuccessful (Table 4). In six instances no such cause could be discovered and the failure was attributed to poor wound healing. Impaired blood supply (following radiation therapy or radical hysterectomy) was considered a factor in three cases. In three others failure was related to postoperative bladder distention due to an obstructed catheter, and these were considered preventable accidents, as was the single instance of breakdown following a vaginal examination postoperatively.

Persistent carcinoma was responsible for two failures, while technical difficulties at operation prevented satisfactory closure in one patient.

DISCUSSION

There are several reasons for the increasing incidence of vesico-vaginal fistula as a complication of pelvic operations:

1. The increased emphasis on the importance of performing total rather than subtotal hysterectomy.
2. The rising use of radical operation in the treatment of pelvic malignant disease.
3. The increasing use of vaginal hysterectomy.

Fistulas that develop after radical surgical operation or extensive radiation therapy for malignant disease most often are due to tissue ischemia and necrosis related to these procedures, and are to be accepted as a part of the risk of a necessarily radical procedure. Improvements in technique have reduced the incidence of this complication, however.

Fistula following operation for benign conditions is a complication that is for the most part preventable and is the result of one or more errors in surgical technique. These are, in the order of diminishing importance:

1. Sutures for closure of the vaginal cuff or for hemostasis placed inadvertently through the bladder wall.
2. Clamps placed on the anterior wall of the vagina, inadvertently catching the bladder as well.
3. Unrecognized perforation of the bladder.
4. Inadvertent or intentional incision into the bladder.

Total hysterectomy requires considerable bladder mobilization in order to gain access to the cervix and the vagina. In operations for benign disease, use of the intrafascial technique (described by Richardson[8]) will lessen the need for bladder dissection and will reduce the risk of bladder trauma.

It is the unusual pelvic surgeon who has not at some time in his surgical experience inflicted direct trauma to the bladder, either through design or because of operative difficulties. Bladder tissue heals readily. If an injury is recognized at the time it occurs, is properly repaired and the bladder is decompressed postoperatively, it will almost always heal.

In the repair of vesico-vaginal fistulas, it is vital that all surrounding induration have subsided before surgical closure is attempted. This may require from three to six months. Collins[2] reported that this waiting period may be considerably reduced through the use of cortisone preoperatively. The patient should be in optimal nutritional status, and the urine should be sterilized with appropriate urinary antiseptics. Upper and lower urinary tract studies need to be done before surgical repair.

Gynecologists, as a rule, prefer the vaginal approach. That it is desirable in most instances is supported by the results in the small series here reported. Moir[7] reported a series of 136 cases in which repair was done through the vagina with only two failures. The Latzko partial colpocleisis operation[4] was designed specifically for the repair of posthysterectomy fistula and is recommended only for those cases in which the defect involves the anterior wall at the apex of the vagina. It has the disadvantage of slight shortening of the vagina, however.

The transvesical suprapubic route is favored by most urologists, and it has been demonstrated that this method is feasible and safe. Miller[5] stated that there can be no good reason to oppose any safe approach and he believes it is a good thing that the suprapubic approach has been developed.

The combined approach, using the blow-out patch technique of Twombly and Marshall,[10] has proved useful, particularly in dealing with the difficult post-radiation fistulas.

Attention to detail is of extreme importance in the postoperative period, with particular attention being paid to the maintenance of bladder decompression. Three failures of repair in this series occurred as a result of obstruction of indwelling catheters, the distention of the filling bladder causing separation at the suture line.

Use of the bladder by-pass procedures is an admission of defeat in the repair of a vesico-vaginal fistula and is to be considered only as a last resort. Because of the high morbidity and, in our experience, the high mortality associated with ureterosigmoidostomy, this procedure is not recommended. Ileal bladder substitution, even though a more difficult procedure, seems preferable.

CONCLUSIONS

Pelvic surgical operation is the most common cause of vesico-vaginal fistula, and the operation of total abdominal hysterectomy leads the list. Bladder trauma, in many instances, may be prevented by paying close attention to surgical technique, particularly to avoiding involvement of the bladder when incising, grasping or closing the vaginal vault. Prompt recognition of bladder injury and proper repair at the time of operation will prevent fistula formation in most cases.

A variety of methods for the repair of vesico-vaginal fistula are available, and treatment of each case can and should be individualized. Regardless of the technique used, the principles remain the same:

1. Maintain optimal nutritional status of the patient.
2. Allow resolution of surrounding inflammatory reaction.
3. Sterilize the urine.
4. Obtain adequate exposure.
5. Excise scar tissue.
6. Approximate broad surfaces without tension.
7. Maintain bladder decompression until union has occurred.

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YES ON 22

5-Fluorouracil In Metastatic Mammary Cancer

EUGENE W. DEMAREE, *M.D.*, and HENRY D. MOORMAN, *M.D.*, Pasadena

• **Thirty patients with advanced metastatic breast cancer were treated with 5-fluorouracil. There were two deaths attributable to drug toxicity. Ten additional patients died of advancing disease, and of this group only two showed significant remissions as a result of drug therapy. Of the 18 patients surviving, 17 obtained objective and subjective remission from their disease and 12 were in complete remission from four to fourteen months from institution of therapy. In four of these cases, radiation therapy was combined with chemotherapy.**

One of a physician's most trying experiences is to reach the end of therapeutic measures that can be applied to a patient with residual cancer or metastatic disease. For patients of this kind with carcinoma of the breast, the first adjunctive therapy was radiation, followed by the use of hormones and further palliation by ablative surgical operation in appropriate cases. With the advent of chemotherapy a further procedure has been added, which in certain patients will prolong palliation and hope after the effectiveness of other treatment has been exhausted.

Of the chemotherapeutic agents available, the most promising in our experience with breast carcinoma has been 5-fluorouracil (5-FU). The present communication is a report on the use of this agent in 30 such patients in private practice who were treated during 1961.

There was no uniformity in the status of the patients. Included were patients who had had previous operation and some in which the lesion was inoperable. The age range was from 36 to 75 years at the time of mastectomy. As to severity, the range was the originally inoperable case to one with recurrent cancer 16 years after operation. Before the trial of 5-FU, 25 of these patients had been treated with radiation, hormones or ablative operation—singly or in combination. Eleven patients had had ovariectomy, up to 12 years before treatment with 5-FU, and five had had bilateral adrenalectomy up to four and a half years before.

Dosages of the chemical which were given intravenously, were determined in each case according to the age, weight and general physical condition of the patient, but the average was 15 mg. per kg. of body weight daily for five days and then 7.5 mg. per kg. every other day until signs of toxicity developed. After toxic symptoms subsided, one-half to a full dose was given once or twice a week as maintenance, the amount depending on signs of recurrent toxicity in the patient. At the time of this report, most of the patients had been treated continuously since the initiation of this therapy, but several remained in remission six to ten months after use of 5-FU was halted.

Toxicity was manifested in 83 per cent of the cases, usually reversible or controllable, by one or more of the following signs: vomiting, enteritis, stomatitis and leukopenia.

Twelve deaths occurred during the entire course of treatment, eight being in patients who had not had any favorable response to 5-FU (Table 1). One patient who had not responded to mitomycin died with pronounced leukopenia shortly after receiving only four and a half doses of 5-FU. Another patient, who had had adrenalectomy two years previously, died of adrenal insufficiency ten days after initiation of 5-FU therapy. These two deaths must be attributed to drug toxicity.

Nine patients who showed no favorable response survived an average of 3.1 months from the initiation of treatment to the date of this report, including one patient still alive after 13 months. Of the eight unresponsive patients who died, four had metastasis to the liver, four to the lung and pleura.

Twenty-one patients were benefited; 20 had subjective improvement, 13 had reduction of pain, 16 had objective reduction of metastatic lesions and five a reduction or cessation of effusion.

Of the 16 patients whose treatment was initiated during the first six months of 1961, 11 received palliation (Table 2). Eight were still surviving—9 to 14 months at the time of this report. Those responding favorably to the treatment had an average survival of 11.3 months from the beginning of treatment to date of report, as compared with an average survival time of two months for those who did not respond favorably to treatment.

From the review of these cases no definite criteria can yet be established to predict which patients would probably benefit from 5-FU therapy. However, the data in Table 3 showing response of those patients who had previously had other forms of treatment are of interest in this regard.

From Pasadena Tumor Institute, Pasadena 1.

Presented before the Section on General Surgery at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

TABLE 1.—*Survival: 1961 to Mid-April 1962*

No. Patients	Type	Number Surviving
21	Response	17
9	No response	1

TABLE 2.—*Survival: January-July 1961 to Mid-April 1962*

Cases	Type	Number Surviving	Average Months Palliation	Average Months Survival
11	Response	8	7.4	11.3
5	No response	1	....	3.1
16	All cases	9		8.2

TABLE 3.—*5-FU Response Related to Form of Preceding Treatment*

Previous Treatment	Positive Response to 5-FU No. of Cases	Per Cent
Positive androgen response	4	100
Negative androgen response	1 of 2	50
Positive estrogen response	5	100
Negative estrogen response	2 of 3	67
Ovariectomy	9 of 11	82
Adrenalectomy	3 of 5	60
All previous treatments	24 of 30	77

Thirteen months' remission following three months' therapy

Case 1. The patient, 49 years of age, was operated upon for a carcinoma of the left breast in 1953; for carcinoma of right breast in 1958. First evidence of metastasis appeared in December 1960, with pronounced dysphagia. X-ray studies showed mediastinal involvement with extrinsic pressure on the esophagus. Biopsy of right suprasternal node was positive. A course of cobalt therapy was given to the area and therapy with 5-FU was begun February 20, 1961, with six daily doses and weekly maintenance doses thereafter for three months. This treatment resulted in complete relief of all symptoms. Examination in April 1962, including roentgen studies, showed no evidence of recurrence. The patient was completely asymptomatic and had had no treatment for ten months at the time of report.

5-FU response from bedfast condition to normal life for eight months

Case 2. The patient, 56 years of age, had had radical mastectomy for a duct cell carcinoma, grade III, with axillary lymph node metastasis, in September 1953. Postoperative x-ray therapy was given to the axilla. The patient remained well until August 1959, then was found bedfast with a pleural effusion and was given mustargen. This was followed by x-ray and androgen therapy with only slight benefit. In January 1961 (15 months later) cervical node metastasis and pleural effusion recurred. 5-FU was given to the point of toxicity, the patient then was maintained on weekly injections for nine months. During this period 5-FU was the only treatment, and it provided complete palliation (freedom from symptoms and disappearance of bilateral effusion and cutaneous metastases) until October 1961, when effusion developed suddenly and the patient failed to respond to further 5-FU therapy. Death occurred two months later.

Excellent result from 5-FU alone, following bilateral ovariectomy and adrenalectomy

Case 3. A 47-year-old woman had had radical mastectomy for infiltrating duct cell carcinoma, grade II, without axillary node metastasis, in June 1956. Cervical node metastasis developed in June 1960 without any other demonstrable disease, and bilateral ovariectomy was performed. Five months later metastatic involvement of mediastinum was demonstrated, and bilateral adrenalectomy was performed. After another seven months recurrence appeared in parasternal lymph nodes without other demonstrable disease. Treatment with 5-FU was started in June 1961 and was carried to the point of toxicity in six days. Due to nausea and leukopenia (4,000 leukocytes per cu. mm.) the drug was discontinued for two months. In September the liver edge became palpable and 5-FU was given as a weekly maintenance dose of 10 cc. for the next three months. On April 2, 1962, the patient's general condition was excellent and there was no demonstrable disease. At the time of this report the interval since 5-FU was started had been ten months and the drug was still effective—a longer period of palliation than that provided by ovariectomy or adrenalectomy.

* * *

It is our belief that 5-FU is an anticancer drug capable of producing significant and most gratifying remissions in the treatment of patients with metastatic breast cancer in whom other methods of treatment have been exhausted.

We believe that it is a valuable adjunct to radiation therapy in cases where the metastatic disease is localized to one area.

In general, patients who have responded well to hormone or ablative therapy will respond well to chemotherapy.

As 5-FU is a toxic drug, great care must be exercised in its use in patients with far advanced disease or patients who have had previous chemotherapy or extensive irradiation. Patients who have had adrenalectomy should be hospitalized during the initial drug therapy, which is carried to the point of toxicity, and carefully observed for signs of adrenal insufficiency.

The Pasadena Tumor Institute, 635 East Union Street, Pasadena 1 (Demaree).

“Ingrown” Nails and Other Toenail Problems

Surgical Treatment

MARSHALL W. JOHNSTONE, *M.D.*, Pasadena

• Appropriate office treatment for “ingrown” or deformed toenails can bring quick and lasting relief. The principle is the removal of the portion of the nail that irritates. For mild problems, a buried nail corner or spur may be successfully trimmed away without anesthesia. More extensive infection requires a nerve block anesthetic of the toe and removal of a wide triangle of deformity with nail edge and the mass of heaped up granulations.

Chronic or recurrent infection is often associated with some abnormality of the nail. It usually saves time and suffering in the long run to remove a third or so of the width of the nail together with its matrix or “root.” Sharp dissection is relatively easy and far more dependable than other methods of removal or destruction of the matrix. The matrix of the entire nail can be removed just as easily to eliminate such problems as the grossly thickened nail of onychogryphosis.

TREATMENT for relief of patients suffering from the miserably painful “ingrown toenail” need not be prolonged or painful or unduly complicated. Simple surgical principles applied with some knowledge of the anatomic features of the toenail and of the common causative factors suffice. The operation can be done in a physician’s office.

Anatomic features of the toenail are illustrated in Figure 1. The nail plate begins 3 to 4 mm. proximal to its visible base. The matrix, from which it grows, extends from about 7 or 8 mm. proximal to the visible base of the nail to the distal margin of the crescent, visible beneath the nail, called the lunula. The matrix forms the nail. The nail plate grows outward, sliding over the nail bed, to the tip of the digit. It is quite important to remember that the nail plate is wider than the visible portion, the edges being hidden in the nail grooves, covered by the nail folds on either side. These hidden edges are soft and tend to tear raggedly across when the nail is trimmed in a rounded manner. In the permanent removal of part or all of the nail matrix, it is important to note that the matrix is wider than the nail plate and starts considerably more proximal than the base of the nail plate, especially in the corners.

ETIOLOGY

Various observers’ experiences seem to have led to widely diverse impressions as to the importance of the various factors leading to “ingrown toenail.”

In my experience the order of frequency of various etiological factors is:

1. Improper trimming of nails, leaving a ragged corner or sharp spur hidden in the nail groove when the nail was cut rounded (Figure 2).

2. Acute trauma or chronic pressure lacerating the nail groove flesh against the nail edge. Short or too narrow shoes and stockings are a major cause of the chronic pressure problem. The pressure may be of a shoe against the medial edge of the nail or,

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Submitted February 26, 1962.

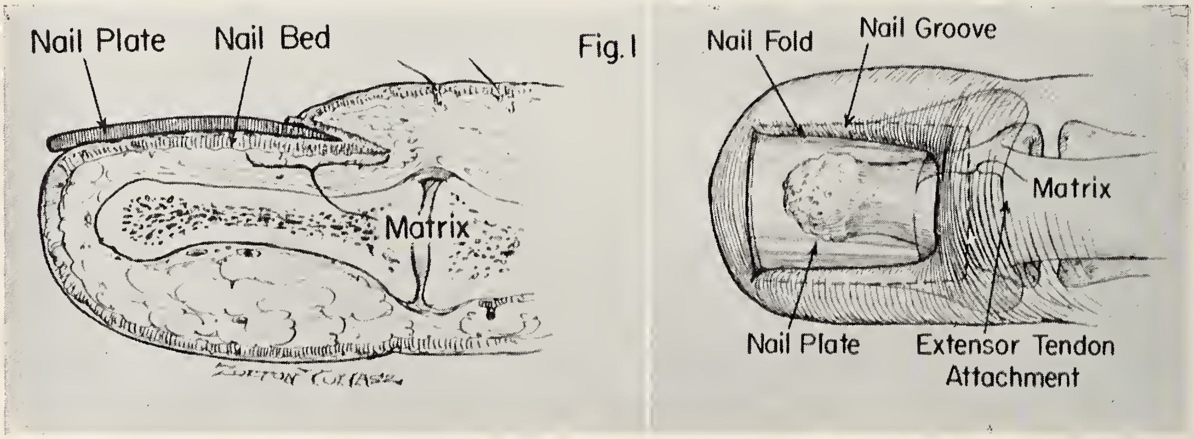

Fig. I

Figure 1.—Anatomic features. Note especially the relations of the visible nail, nail plate and matrix.

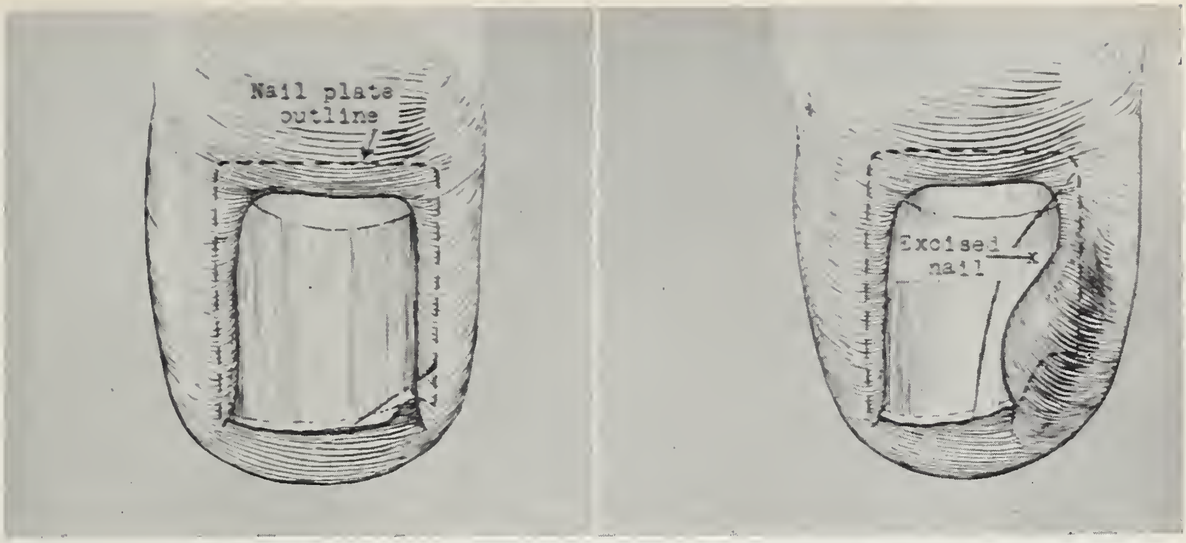

Figure 2.—*Left,* Mild inflammation. The necessary procedure is trimming of the nail corner or the spur. *Right,* severe infection—indication for removal of large triangle of nail plate and excision of swollen tissue.

more commonly, from the impingement of the lateral side of the great toe against the second toe.

3. Anatomical variations that seem to contribute in one way or another to recurrence or chronicity are often indications for the more radical operation to be described later in this communication. These include (a) too wide or obliquely growing nails, which exaggerate the pressure of the shoe or the second toe against the nail edge, (b) inward curling nail edges (seen almost exclusively in adults), (c) flabby flesh that tends to heap up over the nail edge (rarely seen by the author except with active infection), (d) poor vascularity of tissue due to arteriosclerosis or diabetes—important in causation and in delayed healing or even failure of healing, (e) deep nail folds holding collections of dead skin and dirt.

4. Infection from injudicious manipulation by the patient or another person, usually in a patient with poor circulation.

5. Chronic fungus infections (rarely seen by the author).

Secondary factors of considerable importance in many cases are: (a) the tendency of a weak longitudinal arch to allow the foot to lengthen excessively on weight-bearing, jamming the toes into the end of a shoe that was thought to be adequately long; (b) high heels that make the foot slide forward, crowding the toes into the narrowed front part of the shoe.

DEGREES OF SEVERITY: APPROPRIATE TREATMENT

"All surgical treatment," as Fowler[1] so aptly said, "consists in either removing the nail from the nail wall or removing the nail wall from the nail." Although usually not necessary, sometimes if infection is acute, it is desirable to use antibiotics, hot soaks or wet dressings, to limit ambulation and to cut away the shoe for relief of pressure for several days before beginning more definitive treatment. Treatment varies with the degree of severity:

Mild degree of infection, such that the nail corner can be inspected. Although disease of this order often is treated by packing cotton under the corner or by one of the many ingenious methods to protect the infected nail groove from the nail edge and any sharp corners or spurs, the necessary manipulations are painful and return visits are expensive. Usually, without anesthesia, it is possible to expose the nail edge gently and trim away a triangle of nail, including the usual sharp corner or spur left by improper nail cutting (Figure 2, left). This followed by application of an antiseptic solution, hot soaks, wearing a cut-out shoe during healing and then proper nail trimming and choice of shoes and stockings, will result in permanent cure in most cases.

More severe infection, with swelling and granulations (Figure 2, right). In most such cases anesthesia is necessary because manipulation causes extreme pain. Injecting about 1 cc. of 1 per cent xylocaine (without epinephrine) into the vicinity of each of the four digital nerves at the base of the toe brings about excellent anesthesia in 5 to 10 minutes. A wide rubber band or small penrose drain held tight around the toe with a hemostat limits bleeding during the procedure. If permanent removal of the nail appears not to be necessary—and often it is not in cases of this degree of severity—it may be well to combine removal of the nail from the infected tissue and removal of the swollen and hypertrophied

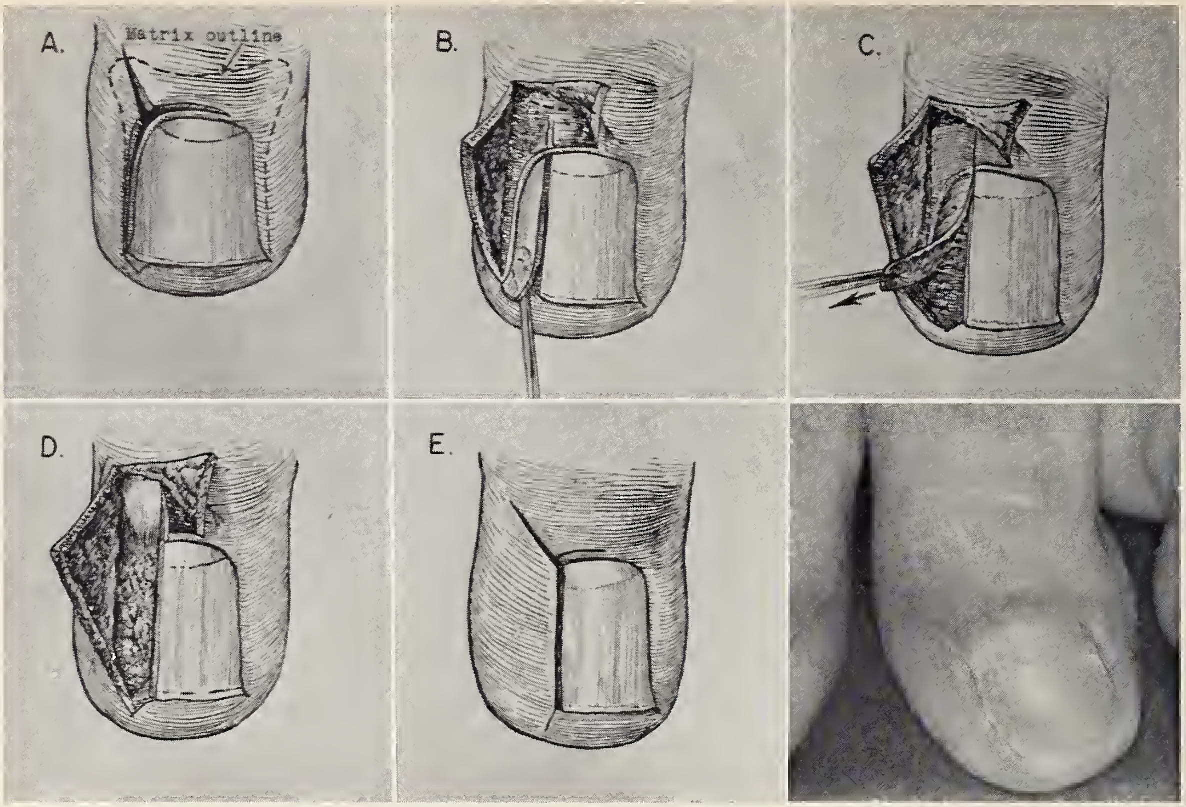

Figure 3.—Permanent removal of nail edge. *A*, incision; *B*, skin flaps turned, nail split and portion being separated by blunt dissection; *C*, incision through matrix and nail bed. Nail bed and nail fold being dissected; *D*, dissection completed; *E*, operation completed; *F*, fourteen weeks after operation.

nail-fold overhanging the edge of the nail. To do this, stout scissors with a sharp point are used to cut away a large wedge of nail (Figure 2, right), care being taken to extend the cut smoothly to the very edge of the nail plate. The triangular piece can then be bluntly separated from the nail bed and the lateral fold. Usually a vicious-looking nail edge spur will be found buried in the granulations. After curettement of the granular material, a generous ellipse of the swollen nail fold is removed, so that after healing the lateral nail groove will be quite shallow. The raw surfaces exposed by this procedure heal rapidly when treated with intermittent hot soaks and application of a small ointment-coated dressing. By wearing a cutout shoe the patient can walk without much pain almost as soon as the anesthetic wears off, but elevation of the foot for the remainder of the day of operation is advisable.

Infections of long standing may have undermined the nail, or extended proximally to become paronychia or (less commonly) may have burrowed plantarward into the pulp. Often in these cases removal of the entire nail is indicated, with whatever additional incisions are needed to open all pockets of infection and clear away granulated material and debris. Removal of the nail is not likely of itself to disturb regrowth of a normal nail, but chronic infection about the base of the nail may have so altered the matrix that the new growth is abnormal. Care after operation consists of keeping the foot elevated until infection is under control, loose packing of all opened infected pockets for one or two days, then hot soaks and use of small, ointment-coated dressings. A shoe cut to avoid pressure at the point of soreness may be used for walking until healing is complete.

Chronic infection associated with anatomical abnormalities will often necessitate choosing between (1) going ahead immediately with the permanent removal of part or all of the nail together with its matrix, as described below, and (2) use of one of the foregoing procedures as a temporary measure for relief of acute infection before undertaking the definitive treatment.

PERMANENT REMOVAL OF THE NAIL

The method here described for permanent removal of all or any portion of the nail entails a minimum of temporary disability, is cosmetically acceptable and is suitable for use in a physician's office. I evolved the procedure myself after years of look-

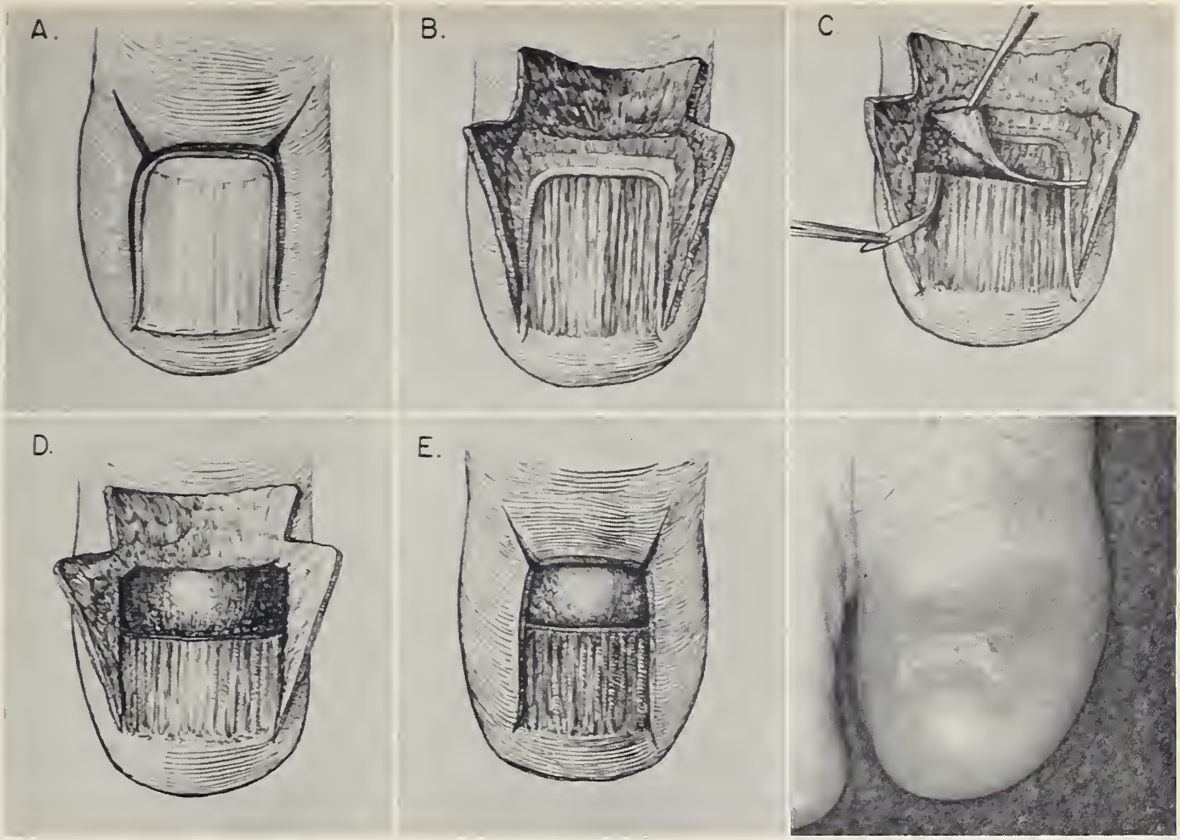

Figure 4.—Permanent removal of entire nail. *A*, incision; *B*, flaps turned, nail plate having been removed; *C*, incision across nail bed and nail walls distal to the lunula. Beginning dissection of matrix and nail walls; *D*, dissection finished; *E*, operation completed; *F*, seventeen weeks after operation.

ing at the fragments of nail regrowing on my own two great toes. I have since found in the literature a few scattered descriptions of methods embodying the same principles and apparently equally effective.

Any condition in which a narrower nail or absence of the nail might be of help is an indication for this procedure. Such conditions would include recurrent "ingrown toenail" in which the nail is too wide for the toe or is growing obliquely or is sharply curled at the edges. Also included are cases in which pain is caused by gross thickening or other abnormality of a nail, such as often follows trauma or chronic infection or comes on with age.

Contraindications are (a) circulation so impaired as to jeopardize healing and (b) active acute infection. Chronic infection need not cause delay, usually, if the wound is left unsutured and a small piece of rubber tissue is placed for drainage.

PROCEDURE

The patient lies supine on the operating table with knee bent and foot flat on the table surface with the toes near the surgeon, who sits at the end of the table. One margin or both or the entire nail may be removed, as illustrated in Figures 3 and 4. After anesthesia is brought about as previously described a tourniquet is applied. The incisions should be made well away from the nail because the matrix from which the nail grows extends wider and higher than the nail plate—like horns (Figure 1). The nail plate can be split with strong, sharp-pointed scissors. The portion of nail that is to be removed is easily separated from its bed by use of mosquito forceps or a small nasal elevator. Following a cleavage plane when dissecting the matrix from below makes it easier to see and remove all the matrix as one progresses, and to distinguish the tapered proximal margin. For good visualization, retraction, the use of binocular magnifiers and a good light are important. It must be borne in mind that the matrix, which must be entirely removed, extends to the distal margin of the lunula, visible through the proximal part of the exposed nail. Any recurrence is evidence of incomplete removal.

As a refinement the nail folds can be removed to eliminate dirt catchers and improve the cosmetic result. Whatever raw areas there may be at the completion of the procedure are small enough to heal rapidly. Elaborate flap operations, grafting and partial amputations, often advocated, are quite unneeded. Sutures should rarely be used—never when there is any infection present. The flaps fall together well, even if packed open for a day or two to provide drainage. Ligatures are almost never used.

The foot is kept elevated, with a pressure dressing in place, until bleeding is controlled. The patient is then sent home with directions to return in two days. Meanwhile he is to keep the foot elevated nearly continuously and to loosen the bandage if it becomes at all uncomfortable. When the patient is again examined on returning to the office, if a drain was used it is removed and instructions are given to begin hot soaks. The soaks can be omitted if there is no indication of infection. By the end of a week a Band-Aid® is usually bandage enough. An old shoe with the toe of the upper cut away and the sole intact is more comfortable and better appearing than a slipper and it should be used until healing is complete. The patient can walk as much as he can without discomfort after the first two or three days. The time away from work usually is only three to four days.

As was noted previously, regrowth is evidence of incomplete removal of the matrix. Two patients on whom I operated for total permanent removal of thickened horny nails returned some time later with definite, very thin shells of very slowly growing nail. This phenomenon was quite acceptable, but a surprise. I believe in each case I left behind just a little of the lunula distal to the incision across the nail bed. In one of the two cases microscopic study of sections of the base of the new nail showed that the new nail and the matrix from which it grew corresponded to the area of the previous lunula and did not extend as much as a millimeter beneath the skin. Although complete removal of a nail matrix must include all the lunula, it is unnecessary to remove the part of the nail bed distal to the lunula. This distal nail bed is epithelium and although when left exposed it toughens to a slightly rough or horny surface, it probably can never produce a true nail that needs cutting.

65 North Madison Avenue, Pasadena 1.

REFERENCE

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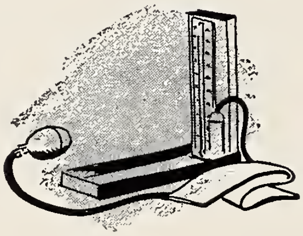
YES ON 22



Workmen's Compensation in California

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COMPULSORY INSURANCE, to most of us, has an unsavory connotation. Yet there is one form of insurance that we are all compelled to pay, and that we pay cheerfully: workmen's compensation insurance.

Every time we buy a loaf of bread, every time we buy a car, clothing or other manufactured articles, every time we build or alter a dwelling or attend a play or opera, part of the cost to us is workmen's compensation.

Workmen's compensation insurance functions generally as follows. Every employed person, with a few exceptions to be mentioned, is assured that if he is injured on the job he will receive medical care and, if necessary, hospitalization for the duration of his disability. He will also receive a part of the salary he loses by being off work. He will be supplied with such articles as braces, crutches or other devices that reasonably could be expected to hasten recovery or make him more comfortable while recovering. In case of his death there are allowances for funeral expenses and for benefits to survivors. These are supplied without direct cost to the workman.

This was not always so, of course, and the inception and growth of the concept, chiefly in Germany (under Bismarck) and England (during the Industrial Revolution), is of interest and will be touched on. In the United States the movement began in the state of New York in 1910 and since then gradually has spread to all our states, though some of the southern states took a long time to join the ranks.

Before 1910, the situation in which an injured workman found himself left a good deal to be desired. According to Warren L. Hanna, nationally known for his contributions in the field of workmen's compensation, the opportunities for redress on the part of an injured workman were circumscribed by English common law. Modification of this situation began to appear in the early part of the nineteenth century, but it was not until much later that more specific benefits for workmen were outlined.

Until that time, and under the precepts of English common law, the employer's responsibilities were vague and not very extensive. The need for change was pointed up in the Industrial Revolution when vast changes in manufacturing techniques, new forms of transportation and general economic expansion forced a realignment of the relationships between employer and employee. Even so, for a considerable period after this the main provisions of the common law prevailed.

The employer, under the common law and even following the minor modifications mentioned, was obligated to do only certain things. He had to provide a reasonably safe place to work. He had to provide reasonably safe tools and appliances. He had to be reasonably careful in hiring employees and servants fit for the work they had to do. He had to lay down suitable instructions for carrying out the work to be done. He was obligated to provide instruction for youthful and inexperienced employees in regard to the dangers that they might encounter. Here his responsibilities ended, and unless the employee could demonstrate that the employer had failed in one of these respects, there was little chance of compensation for injury.

Even then a suit for damages was the only course of action open to the employee. And, of course, a lawsuit presented great obstacles for an employee who was without funds and possibly ignorant. Moreover, the employer could drag out such a trial for a considerable length of time. Possible witnesses might drift away. And a possible witness who remained on the scene naturally was reluctant to testify against an employer for fear of losing his own job. If the case did reach the courtroom, there still remained three formidable hurdles in the path of redress. These were "contributory negligence," "the fellow servant rule" and the doctrine of "assumption of risk."

Contributory negligence was a common defense. An employer often alleged that the employee himself had been negligent and had contributed to the occurrence of the injury. The fellow servant rule also was a plausible defense against an action: If an action proceeded from the negligence of another employee of the same master, the employer could be judged not liable. Finally, the doctrine of assumption of risk was often invoked. If an employee was fully informed that a job he was about to undertake was dangerous, then chose to undertake it anyway and as a result was injured, he was apt to find himself without recourse.

Though the foregoing probably was consistent with Victorian ideas of fair play and justice, dissatisfaction with these provisions arose. Beginning

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Submitted March 16, 1962.

in England in 1880, and later in this country, some slight modifications appeared. These, at first, were still inadequate and the real birth date of effective workmen's compensation laws throughout the nation, and specifically in California, could be put down as 1911.

Even now, in various states, there is no uniformity with regard to the system used. Administration of the laws varies. Provisions of the laws, the philosophy with which they are applied and the benefits awarded differ widely in the different states. But all, now, offer some redress in event of injury at work.

The author once asked an otherwise friendly attorney for a copy of the California Workmen's Compensation Law. His reply was somewhat sardonic: "There isn't any such thing, and if there were you couldn't understand it." The law in its present form, in addition to basic provisions, is a volume of amendments and records of rulings handed down in specific controversies.

THE BEGINNING IN CALIFORNIA

The California laws dealing with these matters began, in a rather halting fashion, with the Roseberry Act of 1911. This act was rapidly modified and has undergone many alterations since. In California, injuries to workmen are under the jurisdiction of the state's Department of Industrial Relations, through the Industrial Accident Commission. Officers are the Governor, the Director of the Department and a Chairman of Commissioners. There are two "panels" of commissioners—one for San Francisco, one for Los Angeles. Under them are referees, attorneys and other officers. In most instances controversy does not arise and these officers act in a supervisory capacity—to see that orderly procedures are followed and that the employeee's rights are protected.

Although the Industrial Accident Commission has jurisdiction over the great majority of employees, there are certain exceptions, some of which are listed below:

- A domestic who works for one employer less than 52 hours a week does not have to be insured and the Commission has no jurisdiction.
- A person who is a casual worker and not part of the employer's trade, business or profession does not come under the jurisdiction of the Industrial Accident Commission.
- The newsboy who delivers papers to your door usually has acquired ownership of the newspaper or periodical before he delivers it. The householder is not responsible for insuring him.
- Farm laborers whose earnings for the previous year were less than $500, and whose employer has properly rejected the provisions of the compensation laws, do not have to be insured by the farmer.
- Employees of religious, charitable or relief organizations who are paid in aid or sustenance do not come under the compensation laws.
- Convict laborers are not covered.
- Self-employed persons or contractors do not have to be insured by the persons they are working for, with the exception of the laborer hired by an individual to do a certain job under the individual's instruction.
- Another worker who is not under the jurisdiction of the Industrial Accident Commission is the occasional watchman in a non-industrial building who is paid by subscriptions of several persons.
- A "volunteer"—somebody who might come into another person's home to fix a curtain rod or revamp the kitchen without pay, does not have to be covered.

These are not hard and fixed rules. On investigation, it may turn out that there was some element in the case of an injured worker that came under the jurisdiction of the Industrial Accident Commission. Accordingly, the Commission is on its guard to work out these situations carefully and to give the injured person whatever protection he may be entitled to.

Following an injury the usual course of events is as follows. An employer must, under risk of penalty, report any injury to an employee promptly. He reports to his insurance carrier (unless he is permissibly self-insured) and the insurance company then arranges for medical attention.

Medical attention usually is put in the hands of a physician selected by the carrier. This may seem an unfair arrangement since the injured man's choice of a physician is not entirely free. The free choice of a physician has been tried in the past and has not worked out well. The patient's own physician may be unfamiliar with the reports and forms required by the Commission. He may be unfamiliar with the points to be covered in a report. In addition, the work usually is specialized, and the physician chosen by the patient may not be competent to carry it out. So the insurance carrier selects the physician, and usually the claimant does not object. However, if the patient is dissatisfied with the physician to whom his case is assigned, he may complain to the Commission. The Commission then will give him the names of three physicians in whom it has confidence, and he may elect any one of them to conduct the medical management of the case from then on. The injured person is cared for, whether the situation calls for application of a simple bandage or a surgical operation and extensive hospitalization. Payment of compensation to the injured person begins after a short waiting period and continues until temporary disability has ended and the patient is judged able to return to work.

If there is a permanent disability the case may go to the Industrial Accident Commission for a "rating" that ostensibly compensates for the disability, and the case is closed.

The foregoing, as was noted, is the usual procedure; but if there is a dispute over the extent of disability, the course of events becomes more complicated—of which, more later.

Other issues, such as liability or the statute of limitations, may have to be resolved by the Industrial Accident Commission, but the majority of cases are concerned with the responsibility of the state and the insured to an injured workman.

Let us say that a workman has an injury to his back. The physician representing the insurance company, after rendering treatment, may report that there is no remaining disability, or recommend a low "rating"—say 20 per cent permanent disability. But the workman may feel that this is a grave injustice. He believes he is totally or maybe 80 per cent disabled and, rightly or wrongly, feels aggrieved.

The Industrial Accident Commission then may come into the picture in a more active way. Owing to the technicalities and legal papers to be handled, the Industrial Accident Commission prefers that the workman retain an attorney at this juncture, although this is not mandatory.

The attorney sends the claimant to another physician of his selection, who records the case history, examines the patient and submits his estimate of the situation. The case is now ready for a hearing before a referee of the Industrial Accident Commission.

This hearing has the standing of our superior courts, but is somewhat more relaxed and informal. The presiding officer is the referee. Present are the claimant, an attorney for the claimant and an attorney for the defendant, plus any witnesses called by either side. Physicians may or may not be among the witnesses called for examination and cross-examination. Testimony is recorded but not necessarily transcribed at the time. Witnesses are sworn and each side presents its case. The referee takes the matter under advisement, and later renders his decision.

THE INDEPENDENT MEDICAL EXAMINER

If there is a conflict of medical testimony, the situation may be still more complex. The referee may decide on his own, just as a judge does, which testimony is most credible. On the other hand, either he or the attorney for the plaintiff or the attorney for the defendant may request the appointment of an independent medical examiner in order to have a third opinion. This physician is chosen from a panel. Usually he is a specialist—internist, orthopedist, neurosurgeon or the like. Like his colleagues who may have appeared in the original hearing, he is not infallible and there is no assurance that his opinion will prevail.

In any case, the function of the independent medical examiner is as follows. He is required to take an independent history and to carry out an independent examination of the claimant, without immediate recourse to other records. Then he reviews the medical file in the case, which is usually voluminous. It holds opinions on both sides and includes a record of the legal procedures that have taken place. The independent medical examiner thereafter reviews the x-ray films and laboratory reports, and possibly transcripts of testimony elicited in other hearings or legal proceedings.

The independent medical examiner may not communicate with the claimant or any attorney during his deliberations. If he wishes additional information he must request it of the Industrial Accident Commission, which usually gives it to him promptly.

Thereafter he prepares a summary and writes an opinion. These are expected to be as impartial as is humanly possible. The report of the independent medical examiner is added to the record. The examiner may be subpoenaed to uphold his opinions in a new hearing later on.

The author of the present communication has tabulated 147 cases in which he acted as independent medical examiner. The Industrial Accident Commission agreed completely or in general with 70 per cent of his evaluations. In the remaining 30 per cent, the Commission was more liberal than he was in 19 per cent and vice versa in 11 per cent.

A hearing before the Industrial Accident Commission can be, and often is, a routine, humdrum procedure in which each side states its case. The referee conducts the presentation of testimony, takes matters under consideration and, several weeks later, renders his decision. The hearing becomes more lively when there is a conflict somewhere along the line. This may be in controversy between the testimony of the claimant and the carrier or the carrier's representative, or between the medical experts. Disagreement between medical examiners is not difficult to understand. Given identical data, in the form of history, findings on examination and the like, physicians on either side may disagree sharply. One may believe that there is a large degree of disability while another may conclude that disability is minimal or nonexistent. In this connection it has to be recalled that the physician's history of the case is that given to him by the claimant. The claimant may misrepresent the actual chain of events and may change his story from time to time. This may put one or both physicians in a highly undesirable position.

It is true that there is a medical file to fall back on to help in resolving discrepancies in the history. Nevertheless, the physician relies chiefly on the story as he gets it from the claimant.

As in the superior courts, motion pictures may be admissible as evidence. These are sometimes informative and sometimes entertaining as well. The technique used is much like that used in the familiar "Candid Camera" show on television. The claimant does not know he is being photographed. After testimony to the effect that he has such-and-such disability, the introduction of "movies" may do a good deal to clarify the situation.

When a lull comes during a hearing and an intermission is requested, one can be pretty sure that a projector and a silver screen will soon appear. The operator must give assurances that the pictures were taken at a certain place and at a certain time.

I can remember two occasions in which the result was a surprise. In one, a claimant who had sworn to great disability was shown doing heavy work on a truck. The claimant, who was present, rose up and shouted, "Hey, that's not me; that's my twin brother." The referee cautioned him to be patient. Very shortly, another man, who did bear a striking resemblance to the first, appeared on the film and proceeded to help out with the heavy work. In this case there was no award for the claimant.

In another that I recall, cameras were spaced over a distance of several hundred yards. The claimant alleged great disability as regarded his right arm and upper extremity. He was shown emerging from a supermarket carrying his groceries with his right arm. Apparently he preferred to use the disabled arm rather than its mate. The claimant was shown not only coming out of the supermarket but walking about a block and a half to his car, very blithely, without shifting his load.

On the other hand, "movies" frequently do not add much. One carrier sent a crew from San Francisco to Sacramento to photograph a claimant. The films showed the claimant doing just about what he admitted he was able to do—very light work, tying up bundles, smoothing a tarpaulin, and the like. Nobody in the hearing was impressed. I can recall other examples of the same sort in which the carrier hoped to accomplish great things by the introduction of movies but movies failed to carry the point.

Those workmen who come under the jurisdiction of the Industrial Accident Commission are insured by agencies generally referred to as "carriers" or "insurance carriers." Federally insured workers are not discussed in this article.

The employer who is obligated to "cover" his employees, and who does not, may find himself in serious difficulties, and few of them risk this. Of the "carriers" there are two main groups: the commercial carriers, and the company-owned and financed carriers acting for the "permissibly self-insured." One of the commercial carriers, the State Compensation Insurance Fund, has a status that is unique and will be discussed as a subdivision of the portion on commercial carriers.

The Commercial Carrier

As far as the author knows, any person or group that is financially sound (this would assume considable reserves) and who can point to some experience, may ask the state's permission to serve as the compensation insurance carrier. With the ratification of the insurance commissioners and subject to the rules they impose, the firm is then in business and may seek customers.

The firm's obligations and rights are clearly set forth in the code and in an extensive and complex list of precedents and rulings in special situations that have arisen and have been adjudicated over the years. But, in spite of the rules and regulations, there are still, in the author's opinion, "good" carriers and "bad" carriers. Some of the features of both kinds will be discussed.

The more or less unique organization mentioned earlier, the State Compensation Insurance Fund, came into existence with money advanced by the state of California in 1914. It is now entirely self-supporting and writes about one-third of all the compensation insurance in the state.

The "State Fund," as it is commonly referred to, is largely independent. It may sue or be sued regardless of reference to the state. The Industrial Accident Commission, on the other hand, exercises a great deal of control over the Fund.

The Fund originated very soon after our state's first compensation laws were passed. The purposes to be served were four. The Fund was to provide insurance at the lowest possible cost. It was to be in free competition with other carriers. It was supposed to be a "warm" rather than a "cold" organization, and to concern itself more with moralities than legalities. It was to carry out an educational campaign against industrial hazards. Opinions vary as to how successfully these objectives have been achieved.

Permissibly Self-Insured

Some firms, such as California Packing Corporation, the Matson Navigation Company and the local representatives of the Bethlehem Steel Corporation, are of such size and financial competence that they are allowed to be permissibly self-insured.

This simply means that they have been able to convince the State that they are competent to run their own insurance companies.

I once asked an attorney who is experienced in compensation work about the general features of the various companies and plans. His reply was to the effect that there were good and bad carriers in both general groups—the commercial carriers and the self-insured firms.

Before going further it might be a good idea to mention authorization. In most instances, when surgical operation or some special examination is contemplated by the physician, it is necessary to receive authorization from the insurance carrier. The necessity for authorization is a nuisance. Some firms are very cooperative and the physician may proceed with what he has in hand and seek authorization later. In other instances there is more difficulty. Sometimes when a carrier is a local office of a larger eastern firm, authorization may have to come from the eastern office, which may be galling to a physician who must treat a patient over a week-end, say, and cannot reach a responsible officer of the company for authorization.

Finally, there is a good deal of variation between companies as to liberality of benefits. Some firms are liberal indeed as to the benefits they disburse. Others may rigidly stay within the obligations imposed by law and may have to be forced to extend a benefit that to some observers would seem only reasonable. Even then, compliance with orders from above may be delayed interminably by legal maneuvers.

In a great majority of cases an employer's sympathy is with the injured workman. Some of the self-insurance funds are very liberal indeed, but since the self-insured employer is, in effect, spending his own money, there can be a tendency, in some instances, to do as little for the injured workman as the law will allow. There is, at least theoretically, a sort of conflict of interests.

On the other hand a company that buys its compensation insurance from a carrier would appear to have no such conflict: When an employee is injured, the employer gets in touch with the compensation carrier and expects the carrier to do a good job. If it does not, the employer can choose another carrier when contract renewal time comes around.

One other inconvenience with regard to self-insured companies is the fact that very often large firms of the sort that self-insure, also have health and welfare plans in addition to their compensation insurance subdivision. It is not uncommon for these two subdivisions to bicker between themselves as to which should do what for the patient.

In short, our compensation procedures have, as might be expected, good and bad points.

The good features are immediately recognizable. The injured workman is provided with financial protection, medical care and the various appliances and devices that may be needed to speed his recovery or lessen his handicap. The death benefits and the pension provisions are good points.

Some of the unsatisfactory features are susceptible of remedy, some not. For instance, we have no way, except through objective tests, of determining the true extent of disability. A malingerer or a psychoneurotic person who claims to have pain and disability may receive awards to which he is not properly entitled. It is impossible for a physician, referee, or anybody else to know how much a person suffers. Unless there is real objective evidence, the case may be rated on subjective complaints—to the detriment of the carrier (and ultimately of the public).

DIFFICULTIES OF EVALUATION

Edward O. Allen, who has served as a referee, an attorney and a commissioner with the Industrial Accident Commission, has the following to say in regard to the difficulties in evaluation.

"It would be of great value to the work of the Commission and to the medical profession in general, as well as to civil practice for damage claims. if a systematic follow-up of approved compromised claims in compensation could be established and there could be compiled statistical information on the sequels of all cases of traumatic neurosis, thus affording information as to the success and failure of this settlement mode of therapy. The Commission at one time was about to inaugurate such a system and employ investigators, but an economy urge in one of the incoming state governors put a stop to it in the budget. The writer, in several cases of alleged traumatic neurosis, where as referee he urged settlement which was approved, happened to learn by accident long after the case was concluded that there was full and permanent recovery to normal after the payment of the compromise."

Another inequity arises, it seems to me, in the method of determining the amount of weekly compensation to be paid. This is designed to be less than the claimant could make if he were at work, so that there may be some incentive for him to get back to the job. I have encountered, however, incidents in which, through a combination of benefits received through other insurance organizations, from other "sick benefits," social security and other like sources, the injured person's income, combined with his compensation, added up to a good deal more than he could get by working. There is no pecuniary incentive in such circumstances to get back to work. Moreover, in weekly payments the law makes no distinction between a single man who has no dependents and the worker who, in addition to himself, may have to support a wife and several children on what the state allows him.

Difficulty also arises in the rating system. Take, for example, the matter of dealing with laborers. For some of them, hard labor is all they are able to carry out. For the Commissioner to assign, say a 20 per cent disability to a worker of that kind is unrealistic. Actually, if the injured man can do nothing but hard work, and is disabled for this, he is 100 per cent disabled. Often there is no prospect of educating him. The suggestion that he go to work as a watchman or an elevator operator is not helpful if there are no such jobs to be had.

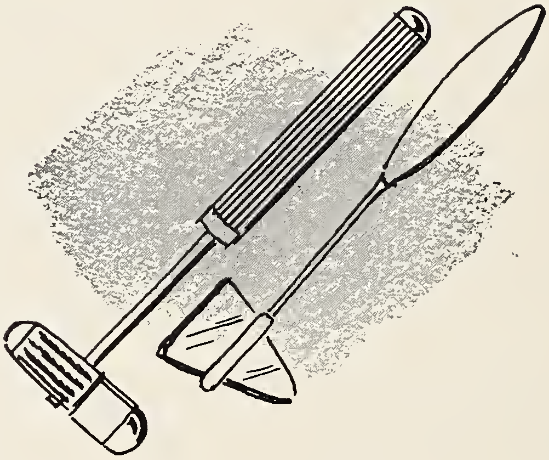
A great deal has been said about rehabilitation for such persons. Harry Bridges in a recent television appearance mentioned this as a possibility in coping with the unemployment problem that will be raised among the longshoremen by mechanization. President John F. Kennedy, in a recent message, urged education and rehabilitation for other displaced workers. It is the writer's feeling that these measures will have a very limited success.

Finally, I think it is quite apparent that awards under the workmen's compensation set-up will continue to be more liberal. Compensation is being awarded in more and more instances of "stroke" and heart disease. Through changes in the Labor Code injured members of the Highway Patrol and city policemen and city firemen (this excludes stenographers, telephone operators, et cetera) are entitled, regardless of the period of service, to leave of absence with full salary up to the period of one year.

It seems to the writer that compensation, medical benefits, social benefits and even the attempts at rehabilitation, eventually will come together under one protective blanket—the blanket that ex-President Dwight Eisenhower has called "government by big brother."

2209 Webster Street, San Francisco 15.

YES ON 22



Post-Tuberculous Bronchiectasis

Indications for Surgical Treatment

NEAL C. HAMEL, *M.D.*, JOHN N. BRIGGS, *M.D.*, and THOMAS A. SCHULKINS, *M.D.*, Encino

• **Two hundred twelve of 308 post-tuberculous patients were found to have significant bronchiectasis; and in 105 of them, in whom certain symptoms or combinations of symptoms and conditions were observed, resectional operations were carried out. Good results were obtained in 81 per cent of the group. There were serious complications in 13 per cent. Three of the patients died, two after pneumonectomy, one after lobectomy plus segmental excision.**

Pulmonary resection is firmly established as the most effective treatment for patients with symptomatic bronchiectasis. In the present study, dealing with post-tuberculous patients who were examined to determine whether or not they had bronchiectasis, the main emphasis is on the indications for resectional operations.

Significant bronchiectasis was demonstrated in 212 of 308 post-tuberculous patients who were bronchoscopically and bronchographically examined in the years 1955-1959. Pulmonary resectional operations were performed in 105 of them.

Post-tuberculous bronchiectasis is defined as cylindrical or sacular dilatation of the bronchial tree occurring in an area of previous tuberculosis. The extent of the previous tuberculosis does not always indicate the degree of post-tuberculous bronchiectasis.

Indications for pulmonary resection in post-tuberculous bronchiectatic patients (Table 1) are as follows:

1. Presence of symptoms: episodes of hemoptysis, recurrent pneumonitis or occasional sputum positive for M. tuberculosis which cannot be explained on any other basis: More than half of the patients in the present study who underwent operation were in this category.

2. Bronchiectasis that is located in poor drainage areas of the lungs, such as the lower lobe, the middle lobe or the lingula. Many of these patients have the symptoms noted in the first category.

3. Bronchiectasis co-existent with bronchostenosis, atelectasis or large amounts of residual fibronodular disease.

4. Bronchiectasis in a young patient in whom it is the only post-tuberculous residual. This group is rather small and the condition represents a relative indication for resectional operation.

The kinds of operation and the numbers of cases in which they were done in the present series are shown in Table 2. Segmental resection for bronchiectasis is not commonly used by the authors because of higher incidence of morbidity than with lobectomy. The relatively high incidence of pneumonectomy in this series was due to severe bronchiectasis combined with atelectasis and fibrosis—a process that is commonly called "destroyed lung."

Complications occurred in 19 per cent of cases, serious complications in 13 per cent (Table 3). Good results were obtained in 81 per cent of the group. Two of the three deaths were associated with pneumonectomy. The remaining death was in a

TABLE 1.—*Indications for Resectional Operation in Post-Tuberculous Bronchiectasis*

1. Symptomatic
   a. Bleeding
   b. Recurrent pneumonitis
   c. Occasional recurrent positive sputum
2. Inadequately drained
   a. Lower lobe
   b. Middle lobe
   c. Lingula, etc.
3. Co-existing with
   a. Bronchostenosis
   b. Atelectasis
   c. Large amounts of residual fibronodular disease
4. In the occasional young patient in whom it is the only post-tuberculous residual

TABLE 2.—*Types of Resectional Operation in 105 Cases of Post-Tuberculous Bronchiectasis*

1. Lobectomy	42
2. Pneumonectomy	36
3. Lobectomy and segmental	15
4. Segmental	4
5. Multiple segmentals	6
6. Bilateral resections	2

Submitted March 23, 1962.

TABLE 3.—*Complications in 105 Resections for Post-Tuberculous Bronchiectasis*

Deaths*	3
Broncho-pleural fistulae	
a. Temporary	2
b. Prolonged*	3
Empyema*	3
Respiratory insufficiency*	5
Hemothorax	2
Wound infection	1
Postoperative pneumonia	1
SUMMARY OF RESULTS:	
Total complications	20 (19%)
Serious complications	14 (13%)
Good results	85 (81%)

*Serious results are marked with an asterisk.

patient who had lobectomy plus segmental excision, a resectional combination which in the authors' experience is associated with a relatively high morbidity rate. When the original disease extends well beyond the confines of a lobe, we often recommend a pre-resection thoracoplasty to help avoid the morbidity associated with resection which includes more than a lobe. Postoperative respiratory insufficiency was noted in five patients. We are devoting more attention to this complication which is largely preventable by better preoperative evaluation and intensive pulmonary studies when indicated. Cardiac catheterization has proven to be an aid in some of the more difficult preoperative decisions.

DISCUSSION

Post-tuberculous bronchiectasis is relatively common in patients who have had recurring tuberculosis. The mere presence of the condition is not a direct indication for operation, but careful evaluation of these patients reveals a relatively high incidence of symptoms associated with it. These symptoms include hemoptysis, recurring pneumonitis and, at times, sputum persistently positive for M. tuberculosis. Bronchiectasis is often associated with bronchostenosis, atelectasis and large amounts of residual fibronodular disease. When bronchiectasis is located in poor drainage areas such as the lower lobe, the middle lobe or the lingula, resectional operation may be indicated. Surgical excision may be recommended for younger patients in whom moderate to pronounced bronchiectasis remains as the only visible residual of a previous tuberculous process.

16100 Ventura Boulevard, Encino (Hamel).

YES ON 22

CASE REPORTS

Hypernephroma—Disappearance of Metastasis After Nephrectomy

R. J. PRENTISS, *M.D.*, F. G. HOLLANDER, *M.D.*,
R. B. MULLENIX, *M.D.*, M. J. FEENEY, *M.D.*, and
G. E. HOWE, *M.D.*, San Diego

HOST RESISTANCE AFFECTS the development of malignant tumors, as do the biologic potential of the tumor and genetic factors. However, the exact reasons for disappearance of metastatic lesions after removal of the primary tumor, are not clear.[1-4]

In the present case, as in many another reported in the literature, pulmonary lesions metastatic from a hypernephroma disappeared after the primary tumor was excised.

REPORT OF A CASE

The patient, a 63-year-old woman, entered the hospital in 1947 with complaint of gross hematuria associated with right renal colic. Secondary complaints were weakness and a heavy mobile mass in the right side of the abdomen. Upon physical examination, pallor, moist rales in both lungs and the presence of a round, smooth, movable mass 15 cm. in diameter in the right flank, were noted.

Results of laboratory studies showed hematuria, pyuria and moderate secondary anemia. The blood urea nitrogen was normal.

In excretory urograms the left kidney and the bladder appeared normal. On the right, pelvic and calyceal deformity typical of renal neoplasm were visualized. Multiple large bilateral pulmonary metastatic lesions were seen in a film of the chest.

The diagnosis was: Hypernephroma, right, with pulmonary metastasis. Informed that the situation was incurable, the patient insisted on surgical removal of the kidney to relieve pain and bleeding. But also she said, "Doctor, if you remove the mother, the daughters will disappear."

Therefore, at the insistence of the patient and the family, and for the relief of local discomfort, right nephrectomy was performed and at operation the pedicle and the renal vein were observed to be involved in the tumor.

The specimen was typical hypernephroma weigh-

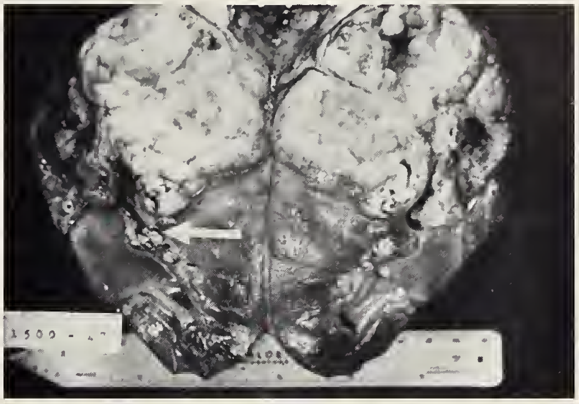


Figure 1.—Gross specimen of hypernephroma removed.

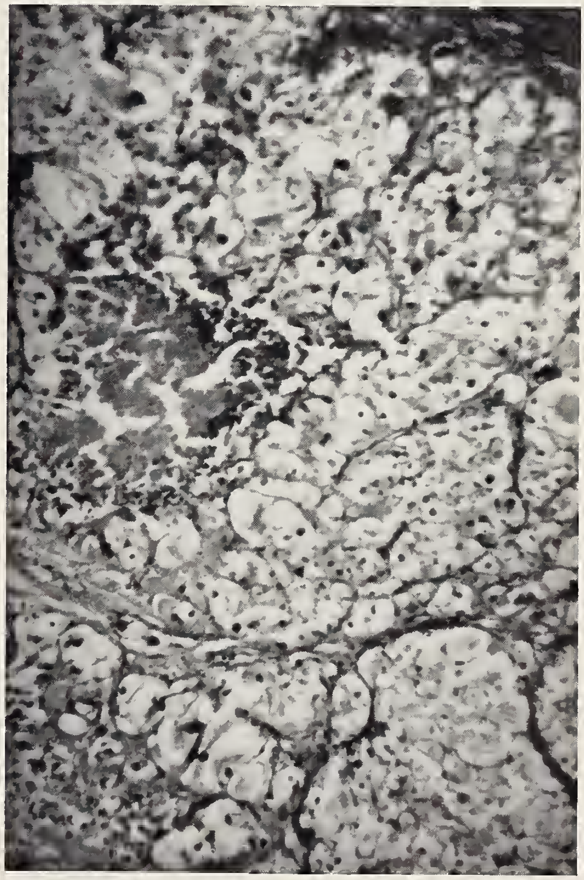


Figure 2.—Photomicrograph of sections of hypernephroma removed (×430).

Presented before the Section on Urology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

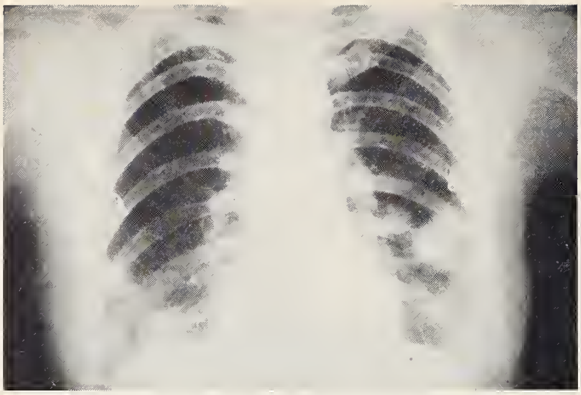


Figure 3.—Chest film three months after removal of primary lesion (in 1947), showing multiple metastasis presumably from hypernephroma.

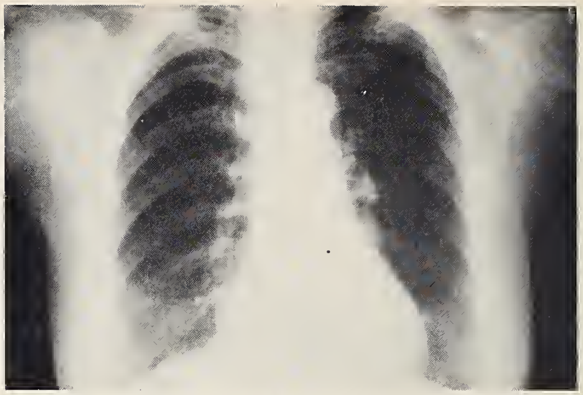


Figure 4.—Latest chest film (1962) showing no metastatic lesions.

ing 540 grams (Figure 1). The pathologist found the renal vein blocked by tumor. Upon microscopic examination it was observed to be clear cell hypernephroma, grade IV (Figure 2).

The patient's health has been excellent in the 15 years since the operation. Films of the chest were taken occasionally during that time. Multiple areas of metastasis were still present three months after nephrectomy (Figure 3) but ten months later the chest was completely free of metastatic lesions, as it was when the most recent film was taken, early in 1962 (Figure 4). Upon examination of the patient, of a specimen of urine and of the remaining kidney, no evidence of disease was found. She was in good health and felt well.

DISCUSSION

We have performed nephrectomy on three other patients with pulmonary metastasis from hypernephroma without altering the progression of the disease. However, we believe that nephrectomy is justified even though there may be distant metastasis, not only to relieve pain and stop hemorrhage from the kidney, but in the hope that secondary metastatic areas will regress. We never hesitate to advise nephrectomy in the presence of distant metastasis from hypernephroma. Other observers have reported removing solitary metastatic areas from the chest, from the renal incision and even from bone. In general, excision of recurrent tumor growth at the original or at distant sites is not wise; but in the case of hypernephroma it must be seriously considered, as occasional cures or control may be expected.

3415 Sixth Avenue, San Diego 3 (Prentiss).

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YES ON 22

California MEDICINE

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For information on preparation of manuscript, see advertising page 2

EDITORIAL

Medical Assistance to the Aged

In 1960 the congress enacted the Kerr-Mills bill to provide federal assistance to states and counties in the provision of medical care for aged citizens who did not qualify for such aid under the welfare laws. The aim of the act was to assure adequate and proper care for citizens above the age of 65 years who could meet their normal living needs but could not meet the costs of medical care under their current budgetary needs.

In 1961 the Legislature of the State of California enacted the Rattigan Bill, which provided that the state would meet one-quarter of the cost of such care, on the basis that the counties would also pay one-quarter and the federal government one-half.

The Rattigan measure went into effect January 1, 1962, and in the first six months applications for assistance were received from close to 26,000 citizens. As of the end of June, the latest month for which certified figures are available, more than 15,000 persons were certified as eligible for Kerr-Mills assistance in California.

Expenditures under the program amounted to about $18 million in the first six months. The budget for the first year had been estimated at $80 million.

On this brief recital it becomes evident that the program has operated to the benefit of a large number of citizens and that it has stayed well within its fiscal limitations, even if we allow for unfiled claims that may swell the cost figures.

It is also a political fact of life that this program has been accomplished through the use of general tax funds and outside the social security structure of the federal government, as the King-Anderson proposal would have demanded. The people have accepted the Kerr-Mills plan as a social responsibility but have rejected the proposition that it be converted into a bureaucratic vote-getter.

With the experience gained in the California program to date, it is obvious that some amendments to the original Rattigan Act and its consequent regulations are now due. Such amendments may be placed before the Legislature in its next session, starting in January.

Fortunately the California Medical Association has maintained liaison with the State Department of Social Welfare, which administers this and other medical welfare plans. The liaison committee has maintained contact with all aspects of the plan and has now made recommendations for amendments in the interest of the beneficiaries, the state and the physicians.

First of these recommendations is that the patient be placed on a dollar-deductible basis to qualify for service, rather than on a calendar day basis. Today an applicant must show that he has paid his own way through 30 days of hospitalization or nursing home care. The liaison committee suggests that a dollar-deductible basis, such as $400, be used instead of a 30-day period, since there may be a wide variation in the costs as between one kind of hospital facility and another and between costs of treatment for varying causes.

The committee also feels that some flexibility should be introduced into the determination of eligibility and that preceding hospitalization should not be singled out as the sole determinant. This exclusiveness, the committee states, is not ". . . medically, socially or economically proper or necessary."

Also recommended as an area for amendment is the portion of the existing law which places a dollar limitation on the personal property an applicant may possess and remain eligible. The effect of this provision appears to make home ownership desirable but ownership of income-producing personal property undesirable. A family living on the income from a modest investment pool may, under present requirements, be forced to destroy the investments—and thus do away with income in the post-care period—in order to qualify for care under the present law. This determination might more properly be made through discretionary administration which looks to the protection of the patient as well as the county.

Changes are also indicated in the present restrictions against a beneficiary receiving aid in one calendar month from both the welfare program (O.A.S.) and the aid to the aged program (M.A.A.). Present restrictions do not allow consecutive assistance from both plans in one calendar month. Medically, the patient's needs cannot be served on a calendar basis, and regulations to place the needs of the patient first are indicated.

A fourth area of change appears in the handling of administrative funds where California Physicians' Service is the fiscal administrator of a county program. Under present regulations, funds which eventually go to C.P.S. are handled through the county government, a needless procedure which can result only in confusion and delay. C.P.S. has so well proved itself as a careful, prudent and accurate administrator of this and other governmental programs that it should be given assistance in the prompt receipt of state and federal funds rather than having to wait while such funds go through the slow-moving machinery of another governmental unit.

These proposals for changes in the present law will bear watching during the 1963 session of the Legislature. Each must, of course, be documented adequately and for each an author must be found. On some there may be objections by state authorities, while others may well find acquiescence and cooperation.

The California Medical Association has firmly supported the concept under which the Kerr-Mills legislation went through the Congress. It has supported the Rattigan legislation to bring the state into its proper place in this program. It now supports amendments to the original law which will provide for a more adequate, more equitable and more easily administered program for the benefit of our older citizens.

Medical Education Loans

A FAR REACHING new medical education loan guarantee program is now under way in American medicine. The goal of this program is to help eliminate the financial barrier to medicine for all who are qualified and accepted by approved training institutions. It is designed to provide a means of financing a substantial portion of the cost of a medical education.

The loan program for medical students, interns and residents is the result of a cooperative effort by American medicine and private enterprise.

The program is administered by the American Medical Association's Education and Research Foundation. The E.R.F. has established a loan guarantee fund. On the basis of this fund, the bank will lend up to $1,500 each year to students. The E.R.F. in effect acts as co-signer. For each $1 on deposit in the E.R.F's. loan guarantee fund, the bank will lend $12.50.

More than 3,300 students, interns and residents have borrowed more than $6,000,000 through this fund since it was started last February. Physicians and others have contributed almost $700.000 to the loan guarantee fund, which makes possible these loans.

The guarantee fund is almost depleted and more money is needed immediately to keep up the loan program. Eventually it will become self-sustaining as loans are repaid, but right now substantial financial help is needed. Your check to the A.M.A.-E.R.F., 535 North Dearborn St., Chicago, will help to keep this important program viable. Contributions to the Foundation are tax deductible.

YES ON 22

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 483rd Meeting of the Council, Los Angeles, Ambassador Hotel, August 25, 1962.

The meeting was called to order by Chairman Anderson in the Ballroom of the Ambassador Hotel, Los Angeles, on Saturday, August 25, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wilson, Todd, Quinn, O'Neill, Bullock, O'Connor, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Anderson and Dozier. Absent for cause, Councilors Ham and Kaiser.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Clancy, Clark, Marvin, Whelan, Tobitt and Bowman, Doctors Batchelder and Miller and Mrs. Griffith of C.M.A. staff; Messrs. Hassard and Huber of legal counsel, county executives Rosenthal of the Forty First Medical Society, Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Geisert of Kern, Dalbec and Baker of Los Angeles, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Nute of San Diego, Grove of Monterey, Neick of San Francisco, Colvin of Santa Clara, Brown of Sonoma and Rideout of Butte-Glenn; Willis Babb of California Physicians' Service; Bob Garrick, campaign director; Doctors Warren L. Bostick, T. Eric Reynolds, Joseph P. Cosentino, John Field, Benjamin Wells, George Y. Abe, Eugene F. Hoffman, Arthur R. Albin and Robert F. Schell.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 482nd Council meeting, held July 7, 1962, were approved.

2. *Membership:*

(a) A report of membership as of August 22, 1962, was presented and ordered filed.

(b) On motion duly made and seconded, 80 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 11 applicants were voted Associate Membership. These were: James T. Harrison, Robert A. Loeffler, Alameda-Contra Costa; Robert A. Herrick, Joseph G. Stroup, Marin County; Austin Matthis, Sacramento County; William C. Adams, Carl E. Lengyel, San Diego County; Ernest P. Guy, San Francisco County; Florence A. Toussaint, Santa Clara County; Carl V. Reichman, Tehama County; Avron M. Greene, Ventura County.

(d) On motion duly made and seconded in each instance, two members were voted Retired Membership. These were Doctors Joseph L. Schwartz, Sr. of Los Angeles County and Joseph W. Sooy of Napa County.

(e) On motion duly made and seconded in each instance, two members were voted reduced dues for postgraduate study.

3. *Communications Study:*

Mr. James E. Bryan presented a report on the study of communications made by him for the Council. The report, which contained 34 specific recom-

OMER W. WHEELER, M.D.	President
SAMUEL R. SHERMAN, M.D.	President-Elect
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IVAN C. HERON, M.D.	Vice-Speaker
CARL E. ANDERSON, M.D.	Chairman of the Council
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ED CLANCY	Director of Public Relations

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mendations, was, on motion duly made and seconded, received.

The Council then reviewed the recommendations made in the report and specified that recommendations 1, 2, 3, 6, 7, 8, 9, 11, 16, 17, 18, 19, 25, 26, 27, 28 and 30 be referred directly to the Bureau on Communications for implementation. Recommendation No. 14 was referred to the Bureau on Communications and the Finance Committee jointly and recommendation No. 24 was referred to the Bureau of Research and Planning.

On motion duly made and seconded, it was voted to establish an ad hoc committee to study and report back on the balance of the report recommendations. On motion duly made and seconded, this committee was voted to consist of the members of the Committee for Emergency Action, the chairmen of the Finance Committee and the Commission on Medical Services and the Board Chairman of California Physicians' Service. On motion duly made and seconded, it was voted that copies of two reports and statements previously made by Doctor Watts be furnished the members of the ad hoc committee.

4. *Bureau of Research and Planning:*

On motion duly made and seconded, it was voted that a report of the Bureau of Research and Planning on the subject of marketing of medical care should be published, subject to deletion of the word "marketing" in the title.

5. *Proposition #22:*

Mr. Bob Garrick, director of the campaign to secure an affirmative vote on Proposition 22 on the November ballot, gave a progress report on his activities and showed samples of the materials being prepared.

6. *Medical School Deans:*

(a) Doctor Benjamin Wells, dean of the California College of Medicine, reported on the progress of the school and expressed thanks for the assistance he has had from committees and other members of the Committee.

(b) Doctor Malcolm Watts, associate dean of University of California School of Medicine, requested endorsement of Proposition 1A on the November ballot, which would provide funds for expanded educational facilities. It was reported that the consideration of this proposition has already been referred to the Committee on Legislation.

7. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, gave an informal report on the World Health Assembly in Geneva, Switzerland, which he attended as one of a 12-man U. S. team.

Doctor Merrill also reported that more than 38 million doses of oral polio vaccine have been administered and that only 12 cases of paralytic polio which could be connected timewise with these administrations have resulted. Of these cases, only five were found to be possibly associated with the vaccine. The department feels, he stated, that there is no reason to withhold mass immunization using the oral vaccine.

Councilor Campbell presented questions on a cancer inquiry distributed by the State Department of Public Health. These questions were referred to the Commission on Public Agencies with a request to report back to the Council at its next meeting.

8. *State Department of Mental Hygiene:*

Doctor George Y. Abe, representing the State Department of Mental Hygiene, reported that changes are being suggested in the Short-Doyle Act and in the commitment laws. The department would like to discuss these matters with the Committee on Mental Health and the Council agreed.

Doctor Abe also reported that the Governor's Commission on Insanity has issued a report affecting the care of mentally ill criminals. A further report will be made on this. Doctor Abe also reported that Doctor Daniel Blain has received an invitation to attend the Congress on Mental Health of the A.M.A., for which he was tendered congratulations by the Council.

9. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reported that in the first six months of the Medical Assistance to the Aged program, about $18,000,000 has been expended. In this period there have been more than 25,000 applications for aid and about 17,000 cases are now on rolls. During the most recent month, 40 per cent of the applicants had not previously been on welfare rolls. Mrs. Evans stated that the law permits the department to lower from 30 to 21 days the required period of institutional care prerequisite to eligibility for aid and that, if experience so indicates, this reduction will probably be made.

Mrs. Evans also stated that the determination of rates to be paid to nursing homes is in the hands of the Department of Finance and that a sampling of 80 nursing homes is being made with a view toward establishing standards by which a suitable schedule of rates might be determined by the end of the year.

Doctor Todd presented a series of questions to Mrs. Evans, the questions and answers to be digested for the benefit of county societies and others.

Mrs. Evans also reported that aid to the totally disabled is increasing under expanded eligibility requirements and that aid to the blind and to needy children cases are decreasing. The department is expanding its investigative force to review the dispensing of pharmaceuticals. She will submit figures on costs of both M.A.A. program and A.N.C. to Liaison Committee for their information and report back to the Council.

10. *California Physicians' Service:*

Doctor Morrison, board chairman of C.P.S., reviewed the national Blue Shield program for coverage of persons over 65 years of age and distributed comparisons of this program with two new plans now approved by C.P.S. for public offering. He also stated that Blue Cross has developed a national plan and that C.P.S. was considering a joint offering with Blue Cross. On motion duly made and seconded, the efforts of C.P.S. in this direction were voted approval.

Doctor Morrison also reported that Riverside County had withdrawn from C.P.S. fiscal agency services in welfare cases and that other counties were considering like action. Should this occur, he said, C.P.S. will probably have to discontinue this service because of the resultant high cost for the remaining counties.

11. *Medical Executives Conference:*

Mr. William Scheuber reported that the Medical Executives Conference had made several recommendations on welfare programs and that the county executives offered their services in these programs. He also reported that Mr. Don Rosenthal, executive director of the Forty First Medical Society, had been voted membership in the conference.

12. *Liaison Committee to Social Welfare:*

Doctor Quinn presented a report for the Liaison Committee to the State Department of Social Welfare, including several suggested amendments to the state law providing for Medical Assistance to the Aged. Doctor John Murray reported that the Commission on Medical Services was in agreement with these proposals. On motion duly made and seconded, the liaison committee report was voted approval and it plus the report of the Commission on Medical Services was ordered referred to the liaison committee and to the Committee on Legislation. (The Liaison Committee report is appended hereto and made a part of these minutes.)

13. *Proposed Medical Care Plan:*

Doctor Arthur R. Ablin presented a report and proposed resolution on a national medical care plan in behalf of the Marin Medical Society. On motion duly made and seconded it was voted to refer this proposal to Doctor Dwight L. Wilbur, chairman of the delegation to the A.M.A., who will name an ad hoc committee to review the proposal and prepare suitable material for Council consideration prior to decision regarding submission to the A.M.A.

14. *Report of the President:*

Doctor Wheeler reported on his recent activities, including the issuance of a charter to the Forty First Medical Society and the orientation meetings for diplomates of the California College of Medicine. He also reported that the board of supervisors in Santa Barbara County is receptive to proposals made by the county society for the handling of welfare programs by underwriting by California Physicians' Service.

15. *Committee for Emergency Action:*

(a) Doctor Wheeler reported on informal discussions with representatives of the State Department of Finance. He stated that the Committee urged the State Department to adopt the current Relative Value Studies as its base. After discussion, it was moved, seconded and carried that the Committee for Emergency Action continue discussions with the State Department of Finance and continue to urge adoption of the current R.V.S.

(b) Doctor Wheeler also reported that California Medical Education and Research Foundation is considering applying for a research grant to conduct studies in relationship to health care of seasonal farm workers. It was moved, seconded and carried that this activity of C.M.E.R.F. be approved.

16. *Report of the President-Elect:*

Doctor Sherman reported on a meeting with the State Board of Medical Examiners and the deans of the medical schools, attended by Association officers. He suggested that the board be invited to send representatives to Council meetings and on motion duly made and seconded, this proposal was approved.

17. *Mass Polio Immunization Programs:*

Discussion was held on the advisability of documenting various mass polio immunization programs on film for later presentation on television. On motion duly made and seconded, this proposal was referred to the Bureau on Communications.

Doctor MacLaggan reported that the ad hoc Committee on Oral Polio Vaccine wished to inquire into a wide variation in insurance premiums for premises liability insurance. On motion duly made and seconded, this inquiry was approved as appropriate for the committee.

Doctor MacLaggan requested authority to look into the possibility of securing uniform prices for oral polio vaccine. On motion duly made and seconded, this authority was granted.

18. *Committee on Committees:*

Doctor Sherman presented a series of recommendations of the Committee on Committees. These were all, on motions duly made and seconded, voted approval. They included:

(a) Ad hoc committee to study the role of county hospitals—John E. Vaughan, Bakersfield, chairman; members, John M. Rumsey, San Diego; William D. Evans of Los Angeles, John G. Morrison of San Leandro, A. B. Sirbu of San Francisco, Calvin Plumhof of San Rafael and Norman Tostenson of Fresno. Consultants, Doctor Norman Fox of San Bruno representing the California Academy of General Practice; Messrs. George Badenhausen of Long Beach and Kenneth Rindflesh of Ventura and Doctor William Stadel of San Diego as hospital administrators.

(b) Ad hoc committee on the coroner law—Lewis T. Bullock of Los Angeles, chairman; Doctors Jesse L. Carr of San Francisco, Henry W. Turkel of San Francisco and Hugh A. Edmonson, Sidney C. Madden and Orlyn B. Pratt of Los Angeles, with Doctors Theodore Curphey of Los Angeles and Raymond Brandt of Orange County as consultants.

(c) Committee on Occupational Health—Doctor Edward Zaik of Los Angeles to succeed Doctor Joseph Sadusk of Oakland, resigned.

(d) A.M.A. Council on Rural Health—Leo Snyder of Fresno to be named as a candidate for this appointment.

(e) For committee nominations—Councilors are to consult with county society presidents to prepare a list of nominees, together with brief biographies of each. Lists to be submitted not later than February 15, 1963, with the President-Elect to meet with county presidents and medical executives in January to urge early submission of lists.

(f) Doctor Sherman reported that the membership of the Forty First Medical Society would entitle that society to two members of the Council. He proposed that Doctors Joseph Cosentino and Forest J. Grunigen be appointed as members by the Council for the interim period prior to the next meeting of the House of Delegates.

(g) The Committee on Committees was given authority to name two representatives on the Visalia experimental program on migratory farm workers.

19. *Finance Committee:*

Doctor Davis presented copies of the audited financial reports of the Association and affiliated organizations for the fiscal year ended June 30, 1962. These were ordered filed. Doctor Davis also presented a report of income and expenditures for July, 1962, first month of the new fiscal year; this was also ordered filed.

Doctor Davis reported on a meeting between the Finance Committee and medical and lay representatives of the Central California Blood Bank, Fresno, in regard to a note signed by the blood bank and subsequently purchased at a discount by the Association. The committee recommended that the Central California Blood Bank be permitted to purchase this note on the basis of its present cost to the Association. On motion duly made and seconded, this purchase was approved.

A proposed budget for the ad hoc committee to study the role of county hospitals was presented. On the recommendation of the finance committee and on motion duly made and seconded, it was voted to appropriate $2,500 for the use of this committee, additional funds to be requested if needed.

Doctor Davis advised the Council that the Finance Committee was considering the retention of investment counsel to make recommendations of investment procedure on investments now held but not due for redemption until 1969 to 1972.

20. *Commission on Public Agencies:*

For the Committee on Other Professions, request was made that Resolution #10 of the 1962 House of Delegates, relating to fluoridation of water supplies, be referred to the Commission on Community Health Services for statewide meetings with dental association representatives and others interested. On motion duly made and seconded, this referral was approved.

21. *Commission on Community Health Services:*

(a) Publication was approved, on motion duly made and seconded, of a program of youth fitness, to be sent to appropriate schools and others.

(b) Resolution No. 79 of the 1962 House of Delegates, relating to the medical aspects of sports, was considered by the Committee on School Health to be too broad a subject for that committee. It suggested that a special committee be named for this subject and Doctor Sherman asked that Councilors forward names of potential appointees to such a committee. On motion duly made and seconded, it was voted that the Finance Committee consider budgetary aspects of such a committee.

22. *Commission on Cancer:*

Doctor Davis reported that the rewriting of cancer studies was progressing satisfactorily. The Patient Need Survey was in preparation for a report which should be completed within the next two months. He also suggested Doctor Doyle as moderator for a panel at a forthcoming quackery conference. On motion duly made and seconded, this appointment was approved.

23. *Staff Report:*

Mr. Hunton reported on a meeting held by representatives of various professional organizations at which discussion was held on the advisability of forming an interprofessional association. The staff will follow the progress of such meetings.

24. *Legal Department:*

Mr. Hassard reported that two cases are now before the State Supreme Court bearing on the judgment of hospital governing boards and medical staff committees on staff appointments. Briefs as amicus curiae have heen filed by the Association and by the California Hospital Association.

25. *New Business:*

(a) Authority was voted for use of C.M.A. mailing lists and facilities for publicizing the Western Institute on Epilepsy for a scheduled San Francisco meeting.

(b) Official approval was voted for an invitation to the American Medical Association to hold its 1968 Annual Meeting in San Francisco.

(c) Authority was denied for a scientific section to use the Association's name in the promotion of scientific programs sponsored by others. This matter was referred to the Scientific Board for consideration when the board is formed.

26. *Time and Place of Next Meeting:*

Discussion was held on the date of the next Council meeting, scheduled to be held in San Francisco on October 6, 1962. Members of the Council are to be polled on their opinions as to whether this date should be advanced to September 29 because of conflicts.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:15 p.m.

Carl E. Anderson, M.D., *Chairman*
Matthew N. Hosmer. M.D., *Secretary*

August 22, 1962

Omer W. Wheeler, M.D.
6876 Magnolia Avenue
Riverside, California

Dear Doctor Wheeler:

At the request of the Committee on Emergency Action, the Liaison Committee to the State Department of Social Welfare has studied the problems that have developed in the administration of the Rattigan Act. Certain recommendations for proposed amendments seemed to be in order.

Medical assistance for the needy aged ought to be provided under state and county direction with federal and local matching funds. This concept has been strongly supported by most members of our profession and by both the American and California medical associations. This principle is expressed in the Kerr-Mills Act.

C.M.A. supported enactment of the Rattigan Act. which adopted this concept in California. This act is a more effective and intelligent approach to the problem than that taken by many other states. Experience points the way in which it may be improved in certain specific areas to better accomplish its purpose.

The medical assistance for the aged (M.A.A.) provision of the Kerr-Mills Act was intended to provide matching funds to purchase care for the medically needy—those persons who are unable to pay for medical and hospital care needed to preserve their health. but are able to otherwise provide for their maintenance. Federal, state and county welfare programs already provide for maintenance of and medical care for the truly indigent.

The administration of the M.A.A. program in California has permitted some of the funds allotted to this program to be used to pay for certain medical care of welfare recipients that local government was already obligated to provide. Some overlapping is inevitable. The recipients of this care are undoubtedly deserving, and in many instances, receiving quality care at less cost than was previously available. However, since funds are needed to provide more professional and other services for those intended to be benefited by the M.A.A. program. the diversion of some of the funds intended for this new group ought to be carefully reexamined.

The present program established by the Rattigan Act made provision principally for financial help to those with long-term chronic illnesses requiring hospital and nursing home care. This was accomplished by providing that "no cost of care shall be paid . . . for the first 30 days of confinement in a hospital or nursing home."

Experience has shown that this 30-day exclusion is grossly inequitable and does not provide for payment of care urgently needed in many cases.

First, the committee recommends that C.M.A. urge support of an amendment to the Rattigan Act which will provide a more realistic, flexible and equitable initial exclusion or deductible. It might be well to incorporate the concept of a certain dollar amount or number of days' confinement as a basic deduction. Under regulations that might be adopted, the maximum allowance for 30 days' services to be provided in a nursing home, may be set at a certain figure such as $400. If a $400 deductible is proper and equitable for a patient needing nursing home care, it would seem appropriate that an equivalent deductible in dollars be used for the patient who needs hospitalization. In many cases, it is apparent that excluding the cost of 30 days' confinement in a hospital is not promoting the true intent of the act. In this regard also, it should be pointed out that the program presently requires that once a person has become eligible for M.A.A. benefits and then been discharged from the hospital or nursing home, he may not return to the same or similar facility and be eligible for assistance without again accumulating a 30-day commitment, unless his return to the hospital is needed within 30 days of his discharge from the hospital. This requirement does not promote either good medical care or good public administration.

The committee also feels that it is not medically, socially or economically proper or necessary to require in all instances that eligibility be made possible only through hospitalization.

There are several ways in which needed flexibility may be obtained. It is not deemed necessary to recommend one method over another.

Second, the committee recommends that one of the conditions for determining the eligibility for M.A.A. under the Rattigan Act be eliminated or modified. Eligibility should be based more on medical care needs in comparison with income available, without also considering certain arbitrary property holdings.

The second of seven conditions of eligibility set forth in Section 4701 of the Welfare & Institutions Code reads: "Whose average monthly income over the past 12 months is not expected to exceed the costs of his medical care plus the cost of his maintenance as determined by the standards of assistance for recipients of OAS." This concept follows the principle set forth in the Kerr-Mills Act. The third condition set forth in Section 4701 of the above code, reads: "Who does not own personal or real property or both in excess of the amount permitted for recipients of OAS." Briefly, this requirement, among other things, limits personal property holdings to $1,200. This means that one who is living frugally off the income from a modest investment, worth say $15,000, must expend these reserves before becoming eligible for financial aid in regard to catastrophic medical care needs. This provision makes it an advantage to own your own home but not to have money in the bank. This limitation is avoided by a few through certain sharp practices.

Physicians can often predict when certain illnesses are going to be continuous and expensive and might make eventual pauperization evident from the start. In such cases, eligibility for financial assistance should be expedited. There are several approaches that can be developed so that worthy cases can be handled equitably and some ultimate indemnity in whole or in part be provided to the county in those cases where a beneficiary leaves a substantial residual estate. Good medical care and sound public policy would seem to be served if this existing condition was modified or eliminated to permit discretionary administration.

Third, the committee recommends that provision be made for consecutive medical care payments in any one month for those unusual cases where a person is eligible for and needs assistance under both the O.A.S. and M.A.A. programs. The present provisions of the law make it impossible for such payments to be made separately and consecutively in any one month. Since medical problems cannot be handled wisely or economically on a calendar month basis, a solution needs to be found for this problem which was created by certain terminology in the statutes.

Finally, the committee recommends that the Rattigan Act and the public assistance medical care law be amended to make possible improved statewide financial administration of these programs at the county level through California Physicians' Service. The state ought to be able to disperse state and federal funds directly to C.P.S., rather than dispersing them to the county and having the county then pay C.P.S. The county would continue to determine eligibility, audit the funds, etc., but need not unnecessarily handle funds that will be distributed by C.P.S.

We must also continue to pledge the active, prompt and realistic self-discipline of our own membership regarding the quality of services rendered and charges made.

It may be anticipated that these suggestions may occasion exaggerated estimates that such a program will be too costly. These same voices loudly proclaim that all our aged people are entitled to medical care, regardless of need. These critics are not interested in the cost of the program; they are only interested in seeing to it that it is paid for by social security taxes.

In general, it is respectfully suggested that basically, all of these recommendations provide for greater flexibility and discretion on the part of the welfare departments, both state and county, in order to better provide for economic and quality care of the medical needs of the aged.

Respectfully submitted,

William F. Quinn, M.D., *Chairman*
Liaison Committee to the State
Department of Social Welfare

No. 12*

Parathion Poisoning—A New Antidote!

PHYSICIANS CALLED upon to treat parathion and other phosphate ester poisoning should be aware of the new antidote, 2-PAM, and its limited availability because of its status as an investigational drug.

2-PAM (2-pyridinealdoxime methochloride) is available only as Protopam chloride to physicians qualified in the clinical investigation of new drugs. They may purchase it from Campbell Pharmaceuticals, 121 East 24th Street, New York 10.

2-PAM has been used most often and most effectively in the treatment of parathion poisoning. Physicians reporting upon its use in such cases have been enthusiastic about its effectiveness and minimal side effects. Information is sparse regarding the effectiveness of 2-PAM in the treatment of human poisoning from other phosphate ester pesticides.

The present consensus is that 2-PAM and atropine are more effective together than either alone. 2-PAM is a specific chemical antidote, releasing the cholinesterase inactivated by the phosphate ester. However, it may not enter the central nervous system in significant amounts, and atropine should always be given with 2-PAM to combat the central effects.

Until 2-PAM is available on prescription, it is recommended that the limited supply be used for serious poisoning which does not respond adequately to atropine. Treatment for poisoning, including the use of 2-PAM when a qualified investigator can administer it, or when it becomes generally available, is outlined as follows:

- *Artificial Respiration*, preferably by mechanical means, with administration of oxygen and suction as indicated.
- *Atropine.* For severe poisoning, after cyanosis is overcome, inject intravenously 2 to 4 mg. (1/30 to 1/15 grain) every 5 to 10 minutes until signs of atropinization appear. A total of 25 to 50 mg. may be necessary during the first day. For less severe poisoning, inject 1 to 2 mg. (1/60 to 1/30 grain) and repeat each time symptoms appear.
- *2-PAM.* For severe poisoning in adults, inject 1 gm. *slowly* intravenously. Give second dose of 500 mg. in about 30 minutes if muscle weakness is not relieved or recurs. Doses for children should be in proportion to body weight.
- *Decontaminate* the skin, hair, eyes and stomach, as indicated. Remove clothing.
- *Symptomatic treatment.* Emergency lasts 24 to 48 hours and the patient must be watched continuously.
- *Cholinesterase test.* Blood should be drawn for plasma and red cell cholinesterase test, preferably before 2-PAM is given.
- *Contraindicated* are morphine, aminophylline, theophylline, tranquilizers, large amounts of fluids intravenously and possibly barbiturates.
- For further information, see "Organic Phosphorous Poisoning, and its Therapy," by W. F. Durham and W. J. Hayes, Jr., *A.M.A. Archives of Environmental Health,* 5:21, July 1962.

COMMITTEE ON OCCUPATIONAL HEALTH
CALIFORNIA MEDICAL ASSOCIATION

Comments and Questions Are Welcomed by the Committee

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*This is the twelfth of a series of articles prepared by the Committee on Occupational Health.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

INFECTIOUS hepatitis was reported with unprecedented frequency in 1961 both in California and in the United States as a whole. Although the incidence has dropped noticeably in 1962, this year appears to be second only to last year, when 6,195 cases were reported in the state.

Because of the mounting importance of hepatitis, an intensive surveillance program was begun in the spring of 1961 by the U. S. Public Health Service. Study data in California were obtained from local health departments.

The statewide attack rate based on reported cases for the 52 weeks of the study was 35.3 per 100,000 persons, which is close to the national figure for that interval. California's highest attack rates occurred in the mountain counties, although Merced County, with one localized epidemic, had the highest rate of any single jurisdiction. Moreover, 56.5 per cent of the patients were 20 years of age and older.

This preponderance of cases in adults, which has also been noted in certain eastern states, is not well understood and was one of the observations that prompted the study. No geographic pattern is evident to suggest reasons for this high proportion of cases in adults or the wide variations among jurisdictions.

Five factors were looked into. Previous hospitalization was noted for less than eight per cent of the cases, and in only three per cent had the patient been in hospital two weeks to two months before onset. Personal contact with a person who had infectious hepatitis was recalled in over 30 per cent of the histories, with family members accounting for almost half of these contacts. Contact history was more frequent among the younger age groups.

Consumption of raw foods was an item of interest because of the outbreaks elsewhere in the country traced to contaminated clams and oysters. However, less than 100 patients recalled eating raw clams or oysters within eight weeks of the onset of disease, and in some of these instances, the shellfish were of eastern origin.

Consumption of other raw foods was so common an event that no epidemiologic significance could be ascribed to it. Water supply was identified as being of community origin in about 90 per cent of the histories, and in most of the remainder approved private sources were used.

A history of blood or plasma transfusion or other injection was obtained from about one-fourth of the patients. In most of the more than 100 cases in which the patient received transfusion, this procedure was implicated in the subsequent hepatitis.

Although the study did not make provision for recording fatal outcome, there were 36 histories which included a note regarding the death of the patient, indicating a case fatality rate of 0.8 per cent.

The present study, which continues and will soon be improved by the inception of a revised history form, has shown that a great deal of data can be assembled on short notice in order to clarify the growing public health problem of viral hepatitis. The vital questions concerning the high incidence of the disease, its unusual age distribution, and the varied and perhaps unsuspected routes of spread have not been answered with finality, but several clues and new revenues of approach have been suggested.

The local health officers and their staffs who contributed energetically to this surveillance study merit much praise and gratitude. The continuation and refinement of this effort should help to bring under control infectious hepatitis, a disease which is disturbing in its elusiveness, frequency and morbidity.

* * *

Controlled fluoridation of water supply of the city of Gridley again demonstrates the effectiveness of this economical public health measure in reducing tooth decay.

Gridley's children have 38 per cent fewer cavities after only eight years of controlled fluoridation, and in addition, one-third of them have no decay at all in their permanent teeth. Eight years ago only 10 per cent of the children were decay-free. In 1956, 76 per cent of the children needed immediate dental care for their permanent teeth. Now only 35 per cent need immediate care.

* * *

The department's fifth annual summer epidemiology training program concluded in late August. Thirty-eight medical students from 28 schools participated this year. The trainees participated in 20 different research and field projects covering a wide spectrum of public health activities in 12 bureaus and laboratories.

In Memoriam

Caldwell, George W., Azusa. Died September 6, 1962, in Duarte, aged 59, of cardiac failure. Graduate of the University of Oregon Medical School, Portland, 1929. Licensed in California in 1929. Doctor Caldwell was a member of the Los Angeles County Medical Association.

✣

Christopoulos, Basilios Konstantine, Oakland. Died August 12, 1962, in Oakland, aged 64, of acute myocardial infarction due to arteriosclerotic heart disease. Graduate of National University of Athens School of Medicine, Greece, 1923. Licensed in California in 1929. Doctor Christopoulos was a member of the Alameda-Contra Costa Medical Association.

✣

Cornell, Harold Davis, Chula Vista. Died September 7, 1962, aged 78, of heart disease. Graduate of the University of Michigan Medical School, Ann Arbor, 1910. Licensed in California in 1920. Doctor Cornell was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Ehrenclou, Olive Nisley, San Francisco. Died March 23, 1962, aged 68, of hypertensive cardiovascular disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1931. Doctor Ehrenclou was a member of the San Francisco Medical Society.

✣

Hedge, Arden Russell, Monrovia. Died August 15, 1962, in Los Angeles, aged 50, of heart disease. Graduate of McGill University Faculty of Medicine, Montreal, Quebec, 1938. Licensed in California in 1939. Doctor Hedge was a member of the Los Angeles County Medical Association.

✣

Howard, Burt Foster, Sacramento. Died August 20, 1962, in Sacramento, aged 91. Graduate of Northwestern University Medical School, Chicago, Illinois, 1899. Licensed in California in 1909. Doctor Howard was a member of the Sacramento County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Irvine, Robert Steele, San Carlos. Died August 14. 1962, in San Carlos, aged 78, of heart disease. Graduate of Columbia University College of Physicians and Surgeons, New York, N. Y., 1914. Licensed in California in 1917. Doctor Irvine was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Levisohn, Max, Fresno. Died August 23, 1962, in Laguna Beach, aged 65. Graduate of Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn, Prussia, Germany, 1927. Licensed in California in 1941. Doctor Levisohn was a member of the Fresno County Medical Society.

✣

Newman, Harold, Chico. Died August 20, 1962, in Chico, aged 49. Graduate of Northwestern University Medical School, Chicago, Illinois, 1941. Licensed in California in 1945. Doctor Newman was a member of the Butte-Glenn Medical Society.

✣

Ostrander, Harold R., Covina. Died August 28, 1962, in Covina, aged 52, of heart disease. Graduate of Rush Medical College, Chicago, Illinois, 1936. Licensed in California in 1939. Doctor Ostrander was a member of the Los Angeles County Medical Association.

✣

Peters, Lindsay, Santa Barbara. Died August 3, 1962, in Santa Barbara, aged 87. Graduate of the University of Virginia School of Medicine, Charlottesville, 1896. Licensed in California in 1922. Doctor Peters was a member of the Santa Barbara County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Schiff, Hans, Los Angeles. Died August 10, 1962, in Carmel, aged 65, of heart disease. Graduate of Universität Köln (Cologne) Medizinische Fakultät, Köln, Prussia, Germany, 1920. Licensed in California in 1937. Doctor Schiff was a member of the Los Angeles County Medical Association.

✣

Schwarz, Alfred Joseph, San Anselmo. Died September 9, 1962, in Kentfield, aged 57. Graduate of St. Louis University School of Medicine, Missouri, 1930. Licensed in California in 1931. Doctor Schwarz was a member of the Marin County Medical Society.

✣

Swinney, Raymond Woolridge, Long Beach. Died August 8, 1962, in Long Beach, aged 69, of myocarditis. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1917. Licensed in California in 1929. Doctor Swinney was a member of the Los Angeles County Medical Association.

✣

Weinberg, Sydney L., Los Angeles. Died August 17, 1962, in Los Angeles, aged 62, of cerebral hemorrhage. Graduate of the University of Michigan Medical School, Ann Arbor, 1924. Licensed in California in 1925. Doctor Weinberg was a member of the Los Angeles County Medical Association.

✣

Wood, Avery Edwin, Watsonville. Died August 14, 1962, near Half Moon Bay, aged 55. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1935. Licensed in California in 1935. Doctor Wood was a member of the Santa Cruz County Medical Society.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Community Service

SERVICE (servitium)—"Conduct contributing to the advantage of another or others; as, a service to the cause of freedom." And what is the motivation for rendering such service? Nothing other than a sense of responsibility—without which one cannot be free to serve.

Relating this to *Community*—"A body of people living in the same place under the same laws"—a conscientious person can never escape responsibility to some community, whether it be that of obedience to the existing regulations, such as the anti-litter laws, or whether it be the kind one feels for his own immediate community.

Doctors' wives throughout our wonderful state are serving their respective communities in a myriad of ways—many through service projects activated by their auxiliaries to the county medical societies. Which of you, for instance, has *not* had his wife mention hours of work connected with a health agency, a poliomyelitis project, a blood bank, a P.-T.A., a local church, a service organization, a cultural, educational or civic project, a youth group, or a hospital auxiliary?

The necessity for "The Public Be Served" theme for this summer's A.M.A. Institute has never been more axiomatic. And so YOU and YOUR WIFE must "Do, and exhibit your doing. Things do not pass for what they are, but for what they seem: to have worth, and to know how to show it, is to be worth double; that which is not made apparent is as though it were not, for even justice is not venerated unless it carry the face of justice; those who are fooled outnumber those who are not: for it is sham that rules, and things are judged by what they look, even though most things are far different from what they appear; a good exterior is the best recommendation of the excellence of the interior."*

In offering one's self to "good works," there should be great discernment, however, for "Great coolness is necessary with the drowning if you would bring them help without peril to yourself."* The creed, then, or so it seems to your writer, should always be that of involvement in those services which either educate, give temporary assistance, or enrich the life of the individual rather than those which sow the seeds for permanent dependence.

MURIEL F. RUMSEY
Community Service Chairman
Woman's Auxiliary to the
California Medical Association

**Gracian's Manual* as translated from a 1653 Spanish text by Martin Fischer.

YES ON 22

INFORMATION

The Financing and Provision of Medical Care in California

A Report of the Bureau of Research and Planning, California Medical Association

IN THE SPRING OF 1961, the Bureau of Research and Planning initiated a study of a group of miscellaneous plans in California through which medical care is financed or provided to various segments of the public. The study was stimulated by a desire to acquaint the medical profession with some of the mechanisms—other than those traditionally identified with voluntary health insurance, such as Blue Cross, Blue Shield, and private insurance—through which health services are purchased in the community by groups such as management, labor and consumers. The emergence of increasing numbers of health and welfare funds, self-insured funds, and even physician-sponsored group practice and Foundation prepayment plans reflects the diversity of mechanisms for the provision and financing of medical care.

Subsequent to the initiation of the study, the California Medical Association's 1961 House of Delegates adopted Resolution No. 85 which gave further evidence of the interest of the medical profession not only in the group of miscellaneous plans but in all techniques employed by the public to avail itself of voluntary health care services within the State. The Bureau of Research and Planning, therefore, decided to expand the scope of its inquiry and to assemble within one document objective information concerning as many varieties of techniques as could be compiled with the assistance of the financing mechanisms or providers of service.

The results of the study, scheduled for publication in October,* should be of interest to physicians and their organizations and to various segments of the public. The purpose of this article is to direct attention to the report and to some of the findings which appear to be of immediate interest.

The first few sections of the study discuss the role of voluntary health insurance in the provision of coverage for health care needs and its growth over the past decade. These phenomena are viewed relative to the various groups and organizations which have come under this system of health care protection. They denote the importance of groups covered because of occupational affiliation, such as programs negotiated by managment and unions and for Federal Government employees and State employees. Affiliation, either through union membership or employer participation, is one of the major reasons for the growth in the total number of persons with health insurance protection. Information on private insurance, Blue Cross and Blue Shield (CPS) plans in California place in proper perspective the detailed descriptions of over 40 miscellaneous plans which constitute the largest section of the study. These plans assume importance in California because of their wide variety, the method of organization and operation, the types of services provided and the participation of a significant number of physicians in their programs. This study brings together for the first time detailed descriptions not available elsewhere in any single reference source.

The study of the structure and other characteristics of such programs, other than private insurance, Blue Cross and Blue Shield, is important in any meaningful evaluation of the mechanisms through which health care is received. California represents one of the prime markets for health service due to the size, composition and urbanization of its population and its high level of disposable personal income. In 1960, of the almost 70 per cent of the population in California covered by some type of voluntary health insurance, 10 per cent received their health service through the mechanism designated as miscellaneous plans. The variety of these plans in existence indicates the degree to which choice may be exercised when alternatives to the more traditional types of plans are made available. These alternatives are characterized by such economic, social and political factors as comprehensiveness of coverage, premium cost, foreseeable out-of-pocket expenses, programs developed along industry lines (such as railroad plans), political sovereignty (unions), social orientation (consumer and group practice plans) and other social and economic determinants.

Of the more than one million subscribers and dependents provided with coverage under 44 miscellaneous plans in 1960 (see Table 1), the larger enrollment was for surgical and medical benefits. The smaller enrollment for hospital benefits is due to the number of persons with hospitalization coverage under a separate plan, either Blue Cross or private insurance.

The size of the plans ranges from 150 to 400,000 persons. Approximately 50 per cent of the plans

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*Copies of the report, entitled *A Study of the Financing and Provision of Medical Care in California,* will be available at $2.00 each from: Six Ninety Three Sutter Publications, Inc., 693 Sutter St., San Francisco 2, California.

range in size from 5,000 to 50,000; however, 80 per cent of the persons covered are to be found in three plans with membership of over 100,000 each. An important characteristic of these plans is the large number which have incorporated the service benefit principle. Of a total of 40 plans reporting, 75 per cent provide service benefits only; these plans serve between 80 and 90 per cent of all persons enrolled in Miscellaneous plans. If those plans offering service benefits are combined with plans offering a combination of service and indemnity benefits, 95 per cent of all plans offer service benefits to between 90 and 95 per cent of all members enrolled in Miscellaneous plans. Table 2 classifies the types of benefits by the 40 Miscellaneous plans which reported such information.

The financing of medical care in the various plans generally depends upon the composition of the group procuring health services and the arrangements made between purchasers and providers of medical care.

The most common method by which these plans are financed is through Health and Welfare Funds. These funds collect monies, generally from the employer, to purchase a group of fringe benefits. Occasionally, however, the employee also contributes to the Fund. Among the group of 40 Miscellaneous plans, 25 per cent are financed through Health and Welfare Funds; over 20 per cent of these plans are financed primarily by the individual member. Table 3 designates the source of financing for health care services.

The date of origin and sponsorship of the Miscellaneous plans are indications of developments in the demand for health care protection. (See Table 4.) These data also reflect the role of plans sponsored by nationality groups in California to provide protection to immigrants and whose origin dates back over one hundred years. Other plans with a long history of operation are those employer-sponsored plans found primarily in the Railroad, Utility, and Oil Industries. Some of these employer-sponsored plans date back over 50 years with one originating in 1869. However, half of the 44 plans had their origin after World War II when fringe benefits assumed greater importance in collective bargaining. Approximately 30 per cent of the Miscellaneous plans began since 1955. Of those originating during this period, 40 per cent were sponsored by unions, 23 per cent by medical groups, and the remaining plans by consumer groups and employees.

Approximately 3,500 physicians participate part-time or full-time in these various plans. These physicians represent 18 per cent of the total number of physicians engaged in active practice in California as of December 1961. Many of these same physicians are also engaged in individual or partnership types of private practice. A large number of the participating physicians accept fees in full payment for professional services rendered. However, the most common remuneration for services rendered to participating physicians in group practice is a salary. Salaried physicians include those physicians who are paid on an hourly basis as well as physicians who are members of medical groups.

TABLE 1.—*Estimated Number of Persons Provided with Hospital, Surgical and Medical Coverage in 44 Miscellaneous Plans in California, December 1960**

Type of Benefit	Number	
HOSPITAL		
Subscribers	408,016	
Dependents	589,444	
Total		997,460
SURGICAL		
Subscribers	433,715	
Dependents	605,487	
Total		1,039,202
MEDICAL		
Subscribers	433,715	
Dependents	605,487	
Total		1,039,202

*Enrollment data for most plans are as of December 31, 1960. However, some plans provided information for years ended in 1959 and 1961.

TABLE 2.—*Type of Benefit Coverage for 40 (Out of 44) Miscellaneous Plans*

Type of Benefit*	Number of Plans	Per Cent of Total
Service only	30	75
Indemnity only	2	5
Service and indemnity	8	20
Service only and Service and indemnity	38	95
Indemnity only and Service and indemnity	10	25

**Indemnity benefit* is one which provides reimbursement on the basis of a schedule of benefits in partial payment for services rendered. The terms "cash indemnity" or "fee-for-service" are often used interchangeably with that of "indemnity benefit."

Service benefit refers to payment in full for services rendered, as provided for in a schedule of benefits which a physician agrees to accept within the terms of or under the conditions specified in the participation agreement. It is also applicable to those situations in which direct service is provided by physicians serving on some salaried or other contractual arrangement in group practice or closed panel plans.

TABLE 3.—*Source of Financing of 40 (Out of 44) Miscellaneous Plans*

Type of Financing	Number of Plans	Per Cent of Total
Employee	5	12.5
Employer	1	2.5
Employee-Employer	3	7.5
Health & Welfare Fund	10	25.0
Individual member	9	22.0
Combination of above	11	27.5
Other	1	2.5
Total plans reporting	40	100.0

TABLE 4.—*Sponsorship of 44 Miscellaneous Plans by Date of Origin*

Plan Sponsor	Before 1900	1900-1929	1930-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1961	Total
Consumer	....	....	2	1	....	....	1	....	4
Employee	....	....	....	1	....	1	1	....	3
Employer	1	5	2	1	....	....	....	....	9
Employee-Employer	....	1	1	....	....	....	....	....	2
Fraternal	2	1	....	....	....	1	....	....	4
Medical Group	....	1	1	....	....	1	1	2	6
Union	....	....	....	....	1	7	4	1	13
Other*	....	....	....	....	....	....	3	....	....
Total	3	8	6	3	1	10	10	3	44

*"Other" refers to several types of sponsorship.

The study also contains detailed descriptions of the benefits provided by this group of plans. In view of their wide diversity, this article attempts no summarization, but merely notes their range in scope from diagnostic and ambulatory out-patient care to comprehensive in and out of hospital services.

Also incorporated in the study are descriptions of several student health services in California. These plans were included for illustrative purposes only, and serve as examples of arrangements that exist. To a large extent, the professional services under these programs have been rendered by groups consisting of a limited number of physicians. Within the last few years, however, many of these student health service programs have begun to provide coverage for the student and, in some cases, his family, under California Physicians' Service and Blue Cross programs.

A significant development in the financing and provision of medical care has been the introduction of Foundation programs for medical care, sponsored by medical societies to finance health services and to assure the provision of good medical care to the public. The rendition of good medical care is assured through the use of review techniques by physicians within the community. Two of the descriptions included in the study—San Joaquin Foundation for Medical Care and Riverside Usual Fee Program—represent two concepts developed and presently being implemented by county medical societies.

At the beginning of 1962, Foundations for Medical Care were in operation in the following counties: Alpine, Calaveras, Fresno, Kern, Kings, Mariposa, Merced, Monterey, Orange, San Bernardino, San Diego, San Joaquin, Santa Clara, Sonoma, Stanislaus, Tulare, and Tuolumne. Usual Fee Programs have been established in Riverside and one is being established in Marin.

Another group of counties employing the usual fee concept but whose programs are limited to the financing aspects of medical care are: Centinela Valley (Los Angeles County), Imperial, San Luis Obispo, and San Mateo, whose programs are underwritten by the California Physicians' Service. The Long Beach Physicians' Health Plan is yet another example of medical society sponsored programs which employ the C.M.A.-R.V.S. with specifically designated conversion factors underwritten by insurance companies and/or California Physicians' Service.

The study includes an example of another type of program. The Douglas Aircraft Company program has been included to illustrate a plan which incorporates some of the characteristics of a medical society sponsored program, although it originated with the employer and its insurance underwriter. Its method of operation and enrollment of physicians represent departures from the types of programs generally associated with private insurance carriers.

The study arrives at no conclusions or recommendations regarding the types of programs available to the public. Its purpose is to contribute to a better understanding of the financing mechanisms in existence in California and to serve as a basic reference for those interested in this subject.

California Medical Association, 693 Sutter Street, San Francisco 2.

YES ON 22

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. Arnold Nurock has been named director of the **Birth Defects Center** at Children's Hospital of the East Bay. He will head a team whose work will be carried on in the new $900,000 William H. and Helen G. Ford Diagnostic and Treatment Center at the hospital. Among its services the team will perform diagnostic studies to determine if the problems of patients referred to the center are due to birth defects. If so, the team will work out a complete plan of rehabilitation to enable the patient to function at the highest possible level. The causes of birth defects also will be investigated.

GENERAL

California Physicians' Service, participating in a campaign by Blue Shield plans across the nation to **enroll persons over 65 years of age** in prepaid health care coverage, is offering to senior citizens in this state a comprehensive scope of benefits including hospitalization, physician care in a hospital, surgical treatment in hospital or office, x-ray and laboratory services, inhospital psychiatric care and post-hospital convalescent care.

The plan is being offered at $13.85 a month for individuals and C.P.S. member physicians will accept C.P.S. fees, based on a $4 Relative Value factor, as payment in full for covered physician services if the patient's income is $6,000 a year or less. Enrollment in the new plan is **not subject to a physical examination** or health statement, and past or present state of health does not affect eligibility for membership. November 15 has been set as the closing date for enrollment.

California Physicians' Service now provides coverage for some 50,000 persons over 65.

* * *

The Audio-Digest Foundation, non-profit subsidiary of the California Medical Association, is considering adding **articles on ophthalmology** to its present group of tape recordings that are offered for subscription by physicians. Audio-Digest recordings over the past ten years have become popular means of "keeping up" in six other areas of medical practice: General practice, surgery, internal medicine, obstetrics-gynecology, pediatrics and anesthesiology. More than 30,000 recordings are mailed to all parts of the world each month.

According to the Foundation's board of trustees, the exact commencement date of Audio-Digest Ophthalmology depends upon how many pre-enrolled subscribers are obtained between now and early 1963. It is intended that the tapes will be issued twice each month. If sufficient interest is indicated from otorhinolaryngologists, as well as ophthalmologists, one tape a month will be devoted solely to the eye and the other to ear, nose, and throat.

Interested specialists are invited to indicate their subscription choice by writing for further information from C. L. Oakley, editor, 619 S. Westlake Ave., Los Angeles 57.

* * *

Dr. Malcolm H. Merrill, California director of public health, has been appointed by President John Kennedy to serve on the newly formed national **Health Resources Advisory Committee.**

The committee was created as a result of recommendations made by the Health Resources Management Conference, held in January. Its purpose will be to make recommendations to the Director, Office of Emergency Planning, on questions of policy relative to the production, allocation, and utilization of health resources under various emergency and mobilization situations.

* * *

Financial help in the **care of children with cystic fibrosis** recently became available through the California Crippled Children's Service.

Physicians having patients with the disease who are in need of such help may obtain information from the Crippled Children's Service or from the nearest local chapter of the National Cystic Fibrosis Research Foundation. Both are listed in telephone books under, respectively *Crippled Children* and *Cystic Fibrosis.*

In calling attention to the new assistance program, the San Francisco chapter of the Cystic Fibrosis Foundation said that "the number of CF applications on file with each county Crippled Children's Service will play an important part in helping this agency determine the amount of money needed to finance the program during the next fiscal year."

* * *

Cooperating with the national Youth Fitness Program, the School Health Committee of the C.M.A. has prepared a guide for use by physicians concerned with developing health education programs in schools of their own community.

Copies of the guides—two and a half pages of printed matter—have been sent to component societies, which can distribute them to interested physicians. In addition the California Department of Education has mailed them to 1,400 school superintendents with a covering letter urging close cooperation with local medical societies.

In a letter transmitting the guides to component societies, Dr. Omer W. Wheeler, president of the California Medical Association, and Dr. M. H. Jennison, chairman of the Committee on School Health, said:

"While schools are now emphasizing vigorous exercise, the medical profession must be watchful that other aspects of fitness are not neglected. Cooperation with school authorities at the local level to work out acceptable procedures for periodic examinations, for screening procedures, and for transmitting medical information to schools is necessary. Cooperation is a joint responsibility of each Component Medical Society School Health Committee and individual physicians and the schools of each community."

* * *

A five-day Postgraduate Course on the **Modern Physiological Concept of Cardiovascular Disease,** directed by Dr. Arthur Selzer, will be given by the American College of Physicians February 11-15, 1963, at Presbyterian Medical Center, San Francisco. The tentative program for the course follows:

MONDAY, FEBRUARY 11

Morning Session—*Chairman,* Arthur Selzer, M.D.

8:30-9:30—Registration.
9:30-10:15—Lecture: Current Concepts of the Regulation of Cardiac Performance, Stanley Sarnoff, M.D.
10:15-10:35—Intermission.
10:35-11:00—Physiological Basis of Dyspnea, Frederic Eldridge, M.D.
11:00-11:30—Origin of Heart Sounds, John J. Kelly, Jr., M.D.
11:30-12:15—Panel: Cardiac Murmurs; Moderator: Arthur Selzer, M.D.; Panelists: J. J. Kelly, Jr., M.D., David

Bruns, M.D., Howard Burchell, M.D., and Herbert Hultgren, M.D.

Afternoon Session—*Chairman*, Forrest M. Willett, M.D.

Symposium: *Applied Hemodynamics*

1:30-2:05—Cardiac Output, Arthur Selzer, M.D.
2:05-2:40—Vascular Resistances: Systemic and Pulmonary Hypertension, Malcolm McIlroy, M.D.
2:40-3:10—Arterial and Venous Pulses, Howard Burchell, M.D.
3:10-3:30—Intermission.
3:30-4:05—Physiological Effects of Exercise Upon the Circulation, Robert Bruce, M.D.
4:05-4:40—Atrial Function, Stanley Sarnoff, M.D.
4:40-5:15—Question and Answer Period.

TUESDAY, FEBRUARY 12

Morning Session—*Chairman*, Dwight L. Wilbur, M.D.

9:00-9:30—Demonstration: Physiological Equipment.
9:30-10:15—Lecture: Physiology and Pharmacology of the Autonomic Nervous System, Julius Comroe, Jr., M.D.
10:15-10:35—Intermission.
10:35-11:05—Renal Factors in Hypertension, Thomas Stamey, M.D.
11:05-11:35—Hemodynamics of Arterial Hypertension, Herbert Hultgren, M.D.
11:35-12:20—Panel: Hypotensive Drugs; Moderator: Herbert Hultgren, M.D.; Panelists: Philip Pillsbury, M.D., Howard Burchell, M.D., David Rytand, M.D., and Frederick Meyers, M.D.

Afternoon Session—*Chairman*, Leyland Stevens, M.D.

Symposium: *Electrophysiology of the Heart*

1:30-2:05—Atrial Arrhythmias, David Rytand, M.D.
2:05-2:40—Ventricular Arrhythmias, Herbert Hultgren, M.D.
2:40-3:05—Cardiac Response to Electrical Stimulation, John Sampson, M.D.
3:05-3:25—Intermission.
3:25-4:10—Current Concepts of Ventricular Activation, Allen Scher, M.D.
4:10-4:45—Orthogonal Lead Systems in Electrocardiography, Mervin Goldman, M.D.
4:45-5:15—Question and Answer Period.

WEDNESDAY, FEBRUARY 13

Morning Session—*Chairman*, Robert L. Smith, Jr., M.D.

9:00-9:30—Demonstration: Physiological Equipment (continued)
9:30-10:15—Lecture: Current Concepts of Myocardial Metabolism, Wilfred Mommaertz, M.D.
10:15-10:35—Intermission.
10:35-11:05—Roentgen Physiology of the Coronary Circulation, Herbert L. Abrams, M.D.
11:05-11:35—Coronary Function Tests, Howard Burchell M.D.
11:35-12:15—Panel: Physiologic Aspects of Coronary Insufficiency; Moderator: Robert L. Smith, Jr., M.D.; Panelists: Herbert L. Abrams, M.D., John Sampson, M.D., and Howard Burchell, M.D.

Afternoon Session—*Chairman*, Harold K. Faber, M.D.

Symposium: *Cardiac Failure*

1:30-2:00—Changing Concepts of Cardiac Failure, John Osborn, M.D.
2:00-2:30—Pathogenesis of Pulmonary Edema, Stanley Sarnoff, M.D.
2:30-3:10—Electrolyte Balance and Imbalance in Heart Failure, Isadore Edelman, M.D.
3:10-3:30—Intermission.
3:30-4:10—Endocrine Factors in Cardiac Failure, John Luetscher, M.D.
4:10-4:40—Hemodynamics of Cardiac Failure, Arthur Selzer, M.D.
4:40-5:15—Question and Answer Period.

THURSDAY, FEBRUARY 14

Morning Session—*Chairman*, Edgar Wayburn, M.D.

9:00-9:30—Demonstration: Extracorporeal Circulation.
9:30-10:15—Lecture: Immunology and the Cardiovascular System, Halsted Holman, M.D.
10:15-10:35—Intermission.
10:35-11:05—Lipids and Coronary Disease, R. Gordon Gould, M.D.
11:05-11:35—Coagulation and Thrombosis and Cardiovascular Disease, Christian Borchgrevink, M.D.
11:35-12:15—Panel: Arteriosclerosis: Moderator: Col. Loren F. Parmley, M.C., U.S.A.; Panelists: Alvin Cox, M.D., R. Gordon Gould, Ph.D., C. Borchgrevink, M.D., Howard Burchell, M.D.

Afternoon Session—*Chairman*, Emile Holman, M.D.

Symposium: *Physiological Aspects of Operable Heart Disease*

1:30-2:05—Hemodynamics of Valvular Stenosis, E. Wm. Hancock, M.D.
2:05-2:40—Hemodynamics of Valvular Regurgitation, Elliot Rapaport, M.D.
2:40-3:25—Physiological Consideration in the Surgical Treatment of Congenital Heart Disease, Howard Burchell, M.D.
3:25-3:45—Intermission.
3:45-4:20—Physiological Lessons from Cardiac Surgery, Frank Gerbode, M.D.
4:20-4:45—Regressive Physiological Changes following Cardiac Surgery, Arthur Selzer, M.D.
4:45-5:15—Question and Answer Period.

FRIDAY, FEBRUARY 15

Chairman, George Robson, M.D.

9:00-9:40—Film: "Extracorporeal Circulation and Hypothermia in Cardiac Surgery, Doctors Gerbode and Osborn.
9:40-10:10—Perfusion and Hypothermia, John Osborn, M.D.
10:10-10:30—Intermission.
10:30-11:15—Lecture: The Control of Peripheral Circulation, Professor A. David M. Greenfield.
11:15-11:45—Catecholamines and the Cardiovascular System, Alan Goldfien, M.D.
11:45-12:15—Effect of Chronic Respiratory Diseases upon the Circulation, Frederic Eldridge, M.D.
12:15-12:20—Closing Remarks.

THE PHYSICIAN'S *Bookshelf*

MEDICAL PHARMACOLOGY—Principles and Concepts—Andres Goth, M.D., Professor of Pharmacology and Chairman of the Department, University of Texas Southwestern Medical School, Dallas. The C. V. Mosby Company, St. Louis, 1961. 551 pages, $11.00.

There is no question of the need for a really short textbook of pharmacology. The major texts are primarily useful for reference, and are not ideally suited to the needs of either medical students or most physicians. Some of the English texts come close to meeting this need (in my opinion the best is Wilson and Schild's revision of A. J. Clark's *Applied Pharmacology*), but perhaps due to differences in nomenclature of the drugs they are not especially popular in the United States.

Dr. Goth has attempted to provide the basic principles of pharmacology in a volume of modest size. This book is a valuable step in the right direction, even though the author does not completely succeed in attaining his difficult objective. In the first place, the discussion of general principles, such as drug absorption, metabolism, site of action, structure-activity relationships, mechanisms of action, drug reactions and toxicity, is limited to an introductory chapter of 25 pages. While this might suffice for a physician whose primary interest is likely to be in the action of a specific drug, it does not provide an adequate background for a student attempting to gain a basic understanding of modern pharmacology.

It is not surprising to find in a single-author text on a broad subject some unevenness in the quality and comprehensiveness of coverage. There is a striking contrast between the excellent and perhaps too-detailed chapters on histamine and the antihistamines and the sketchy coverage of the sex hormones, vitamins, and the pharmacologic basis of the effects of drugs on the gastrointestinal tract. The author has included a bibliography at the end of each chapter, usually citing original articles or important reviews. This is a commendable feature, since there is often a temptation to omit bibliographic references in the shorter texts, thus discouraging the student from seeking out further information.

The author devotes too much space in proportion to the size of the book to the reproduction of structural formulas of drugs. (I estimate that the equivalent of 50 pages is occupied by these formulas.) While a review of the chemistry of drugs is certainly essential to an understanding of the principles of drug action, the inclusion of many pages of structural formulas without adequate discussion of the significance of the chemical modifications within the various groups of drugs appears to be an extravagant waste of space. Moreover, a consistent method of rendering the formulas has not been used; in some cases closely related drugs are illustrated in a manner that would require the non-chemically oriented student or physician to spend a good deal of extra time ascertaining the structural relationships.

In a book designed for medical students or practicing physicians, one would hope for a more extensive use of carefully designed diagrams to illustrate the principles under discussion. In a few instances these are effectively used, but in many places discussions of rather complex phenomena would have been aided by the judicious use of diagrammatic illustrations.

The occasional use of trade names and the use of charts or graphs which refer to agents no longer in active use can probably be pardoned on the basis of the fallibility of a single author. Misprints are few, and save for an occasional minor error in structural formulas, are not distracting. The book is well indexed, well printed, attractive, and easy to read.

In spite of the defects mentioned above, the book has many good points. It is of readable size; the author's style is clear and concise. It is a tribute to Dr. Goth's knowledge and experience in teaching that he has been able to cover such a broad field so effectively. This book might well be recommended for medical students in a second year pharmacology course, although my personal preference would be to encourage students to become somewhat familiar with one of the more detailed and definitive texts which can serve as a reference volume in later years. For the practicing physician who wishes a reasonably brief review of modern pharmacology, Goth's book comes closer to meeting the need than any other available text.

PETER V. LEE, M.D.

* * *

MARTINI'S PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS—Third Edition—Revised by Yale Kneeland, Jr., M.D., Professor of Medicine, Columbia University; Attending Physician, Presbyterian Hospital, New York City; and Robert F. Loeb, M.D., Bard Professor of Medicine, Emeritus, Columbia University; Consultant, Presbyterian Hospital, New York City. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1962. 275 pages, $4.75.

This small book covers in very adequate fashion the subject matter indicated in the title. It also adheres closely to the principles of Physical Diagnosis and purposely avoids detailed consideration of roentgenography, electrocardiography, and other specialized diagnostic technics.

The first section deals with the general examination and emphasizes the importance of seeing, hearing, and feeling in diagnosis and the necessity on the part of the examiner to develop these faculties to a high degree.

The second section deals with more specific details and the examination of the various body systems. Pertinent physical findings are interpreted in the light of present patho-physiological knowledge. There is little or no redundant material presented.

This book was originally intended for the student to guide him in his approach to the patient and his clinical problems. This goal I believe has been successfully attained.

CLAYTON D. MOTE, M.D.

ACQUIRED SURGICAL LESIONS OF THE ESOPHAGUS—Clifford F. Storey, M.D. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1962. 365 pages, $19.00.

This is another monograph in the Charles C. Thomas series. The purpose of the book was to enlighten physicians generally about disorders of the esophagus which are now amenable to satisfactory treatment, surgical and otherwise. It is designed to contribute to an earlier and more accurate diagnosis of esophageal disease, and point out the available methods of therapy in dealing with these disorders.

The subjects covered include achalasia, esophageal diverticula, hiatus hernia, reflex esophagitis, ulcers and strictures of the esophagus, foreign bodies of the esophagus, perforations, spontaneous and traumatic, and acquired esophageal tracheobronchial fistula, as well as a discussion of tumors, cysts and carcinomas of the esophagus. Esophageal varices are also discussed adequately, including the available forms of therapy.

On the whole, the book is an excellent review of these acquired surgical lesions of the esophagus. It is well illustrated, the reference lists are complete and adequate. One need hardly refer to the references, for the general material contained within the book is adequate for all practical purposes. I was a little disappointed in the illustrations of surgical techniques, but the illustrations are very simply done and are diagrammatic rather than elaborate. They are helpful but would not be sufficient to permit the uninformed surgeon to completely orient himself with respect to the operative procedure under discussion. The x-rays and illustrations are adequate and informative.

This book can be recommended as a concise, informative and well-written book on acquired surgical lesions of the esophagus.

Victor Richards, M.D.

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SHOCK—PATHOGENESIS AND THERAPY—An International Symposium sponsored in Stockholm, 27th-30th June, 1961, by CIBA. U. S. von Euler, Stockholm, Chairman; edited by K. D. Bock, Basle. Springer-Verlag, Berlin, Gottingen, Heidelberg, 1962. Copies are available from Academic Press in New York City at $13.00 each.

The four-day symposium of 41 participants from 14 countries was planned by von Euler. It included 31 papers, which were followed by enthusiastic discussions. Together, these reports present an extensive review of current research on problems of shock. The index is comprehensive. Extensive bibliographies omit the titles of references cited. Important contributions include papers on metabolism during shock by Mingone, irreversible shock in dogs by R. Lillihei, classification of hypotensive states by Rushmer, kidney function in shock by Kramer and by Selkurt, neural factors by Neil, and the problems of experimental design by Fine. A prospectus for future bedside research is presented (p. 269). A short section devoted to research on therapy includes discussion of hypothermia, of fluid therapy, and of drug therapy.

Rational therapy of the hypotensive state demands concise definition of etiology and of the resulting chemical and physiologic changes. Approximately eleven pathogenic mechanisms are distinguishable, and shock in turn may lead to diverse terminal events. The common experimental models are hemorrhagic shock and endotoxin shock. A major research objective is to describe the mechanisms of irreversible shock.

Modern methods of measurement and control of blood volume are replacing inadequate estimation techniques based on the hematocrit and clinical signs, but do not obviate the need for experienced judgment by the physician. Vasoconstrictor drugs commonly prescribed may sometimes be contraindicated, since excessive vasoconstriction can alone induce shock, and milder adrenergic vasoconstriction may accentuate development of traumatic or endotoxin shock. Drug blockade of adrenergic vasoconstriction may be beneficial in certain patients responding poorly to volume replacement.

This scholarly symposium report is a valuable sourcebook for experimental surgeons and clinical investigators, and provides stimulating new views for cardiologist and surgeon.

Alfred W. Childs, M.D.

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ELECTROCARDIOGRAPHY—Third Edition—E. Grey Dimond, M.D., Director, Institute for Cardiopulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California; Paul Schlesinger, M.D., Chief, Outpatient Department of Cardiology, Fifth Medical Clinic, University of Brasil, Rio de Janeiro, Brasil; and Rafael L. Luna, M.D., Cardiologist, Hospital Do Servidor Da Guanabara, Rio de Janeiro, Brasil. Distributor, The Corinth Press, Box 51, Mission, Kansas, 1961. 196 pages, $6.00 per copy.

This monograph, a third edition by Dr. E. Gray Dimond, an outstanding teacher of electrocardiography, is a well written and bold attempt to take the uninformed student or practicing physician from a beginner's level to an understanding of spatial electrocardiography and vectorcardiography. He and his co-authors are clear, concise and direct in their endeavor to develop a critical analysis of clinical problems by means of these laboratory techniques.

The first section of 59 pages deals with the basic physiology of vectors, leads and spatial analysis. Without presenting new or startling concepts, the authors develop succinctly vector analysis; their text clearly reflects their experience in participative teaching. The presentation of vector loops by means of the cube system should not incur disfavor from workers who advocate the Frank or other vector systems.

The second section of 27 pages discusses electrocardiographic and vectorcardiographic alterations secondary to ischemia, injury, necrosis, hypertrophy and block. Because two of the authors are champions of the Mexican school of electrocardiography, this section is slanted towards the concept of systolic and diastolic overloading of the right and left ventricles. Although this postulate is not universally accepted, it is an attractive way of trying to correlate clinical with physiological data.

Section III, consisting of 54 pages, offers a series of 27 actual electrocardiograms and vectorcardiograms with detailed analyses. Here is the meat of their work, offering a unique opportunity to solve clinical problems. If there is a chief criticism of the book, it is that the illustrations should have been placed such that no reference would have been necessary to a text on the back side of the illustrated pages. One suspects that problems of cost prevented illustrations and text being on single or adjoining pages, which would have maintained more effective teaching and learning.

The final section of 43 pages is an alphabetical glossary which defines more than 200 terms ranging from aberrant conduction to the Wenckebach's-Lucciani phenomenon. Pertinent bibliography is incorporated in the text.

Although several of the electrocardiographic reproductions could be enlarged for purposes of clarity, the vectorcardiographic reproductions are quite satisfactory, and are enhanced by the simultaneous illustration of body contour diagrams with the vector loops.

This book throws light on a difficult problem, making it valuable reading for the undergraduate or post-doctoral student or physician who is not reading electrocardiograms or vectocardiogams, as well as for those who are.

Hilliard J. Katz, M.D.

RENAL BIOPSY—Clinical and Pathological Significance—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A., Editors for the Ciba Foundation. Little, Brown and Company, 34 Beacon Street, Boston, Mass. 395 pages, $10.50.

In this symposium 29 pathologists and clinical investigators present papers and discuss at length what they have learned from a total experience of over 5,000 renal biopsies. The 13 papers deal electively with areas of active interest in renal pathology. Most of their contents having been published elsewhere, the papers serve as starting points for lively workshop discussions, and this is where most of the "pearls" can be found. The book is generously illustrated with black-and-white photomicrographs, and the index is very good.

Renal biopsy with its related techniques, electromicroscopy and enzyme studies, has expanded our basic knowledge and is raising the level of sophistication in the diagnosis of renal disease. Because of the extremely limited amount of tissue that can be so magnified (it takes one month of work to cover one square millimeter) electron microscopy will remain a research tool. Its value lies in teaching us to interpret light microscopy more accurately.

The disease most actively investigated has been the nephrotic syndrome which can be associated with a great variety of glomerular diseases. The clinical syndrome has been likened to congestive heart failure in relation to heart disease. In this area, the biopsy experience has established a trend to replace the term "chronic glomerulonephritis" with purely descriptive histological diagnoses: No glomerular disease by light microscopy but foot process fusion by electronmicroscopy (synonym: lipoid nephrosis), proliferative glomerulonephritis, membranous glomerulonephritis. This is advantageous since it avoids the implication of a single etiology, poststreptococcal, for which there is no support. There also is some correlation between morphology and response to steroid treatment. Much work remains to be done to establish whether the various morphological types represent different entities, and which of them can be stages of the same disease. In quite a few patients with a wide variety of clinical presentations diseased glomeruli may coexist with normal ones: focal glomerulonephritis.

In pyelonephritis, correct classification continues to require considerable judgment. To start with, no single pathological feature of this disease is pathognomonic, perhaps with the exception of cell casts which are not common. In early pyelonephritis, the needle may miss the diseased areas; later, renal biopsy will always be representative but the degree of activity remains hard to judge. Cultures from the renal tissue quite frequently will show organisms different from those found in the urine. Pyelonephritis can present as acute anuria in which case the prognosis with dialysis is good, it can present as recurrent isolated gross hematuria, and it can occur with no proteinuria at all. Finally, it does not appear to be a common concomitant of the living diabetic.

There is fair agreement among these experts as to the major clinical indications of renal biopsy: choice of treatment in the nephrotic syndrome, acute anuria of obscure etiology, apparent chronic nephritis or persistent proteinuria, recurrent hematuria, choice of treatment in chronic infection. Injurious results have been exceedingly rare in the hands of responsible investigators but widespread use of this method is not advocated for reasons stated quite simply by the initiator of renal biopsy, Dr. Poul Iversen: "The renal biopsy technique and the judgment of the pathoanatomical changes are so difficult that the procedure and the judgment should only go on at places where there is expert knowledge."

In the opinion of the reviewer this statement applies to the readership this little book ought to reach: It is a must for all those pathologists and internists aspiring to expertise in interpreting renal biopsies if only to preserve their humility in the face of many unresolved questions. It is not recommended to the uninitiated since the amount of detail presented would tend to overwhelm him.

K. Peter Poirier, M.D.

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CLINICAL OBSTETRICS AND GYNECOLOGY—March 1962—A Quarterly Book Series—Volume 5, Number 1—The Newborn—Edited by Michael Newton, M.D., and **Office Gynecology**, Edited by Roger B. Scott, M.D. Published by Hoeber Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1962. The series is published quarterly, $18.00 a year (sold by subscription only). 320 pages.

The "Yellow Quarterly" is a journal in book form, which from its inception in 1958, has sought to provide a continuing source of authoritative information in the various phases of obstetrics and gynecology. Readers interested in either the newborn or in gynecology will find this a worthwhile volume containing a number of instructive contributions.

The first symposium in this issue commences with an authoritative summary by Burnard on current concepts of the newborn respiratory and cardiovascular physiology. An otherwise excellent presentation of the immediate care of the newborn is hampered by an inadequate discussion of resuscitation; although the author notes that this was the subject of a symposium which appeared two years previously. Chapters on hyperbilirubinemia, the respiratory-distress syndrome, infant feeding, perinatal mortality and the problem of staphylococcal disease are up-to-date, with current bibliographical references, and reflect current interest in these subjects. The reader is admonished not to miss the fascinating account by Jelliffe of the management of pregnancy, labor and the newborn among primitive peoples in the "underdeveloped" areas of the world. Jelliffe astutely appraises the effects of some of these practices on maternal welfare and child health. It is unfortunate that in this symposium a chapter could not have been devoted to the fetal hazards of maternally administered drugs, and of the relation of maternal to fetal disease.

The second symposium in this volume considers the diagnostic and therapeutic procedures which can be conducted in the gynecologist's office. The importance of cancer detection is evidenced by six articles on this subject, ranging from cytology and the pathologist; cytology and the clinician, cancer detection, Moore's article on cervical lesion, an essay on vulvar lesions by Woodruff, and Faulkner's pithy article on adnexal enlargement. The reader will be delighted with Dr. Henriksen's account of the "Witch Syndrome," premenstrual tension. Other chapters include discussion of the fern and Rubin test, pelvic and urinary tract infection, geriatric gynecology, and problems in the management of psychiatric illness. The subjects of infertility, dysfunctional uterine bleeding, hormonal therapy, leucorrhea and stress incontinence are regretfully not to be found in this presentation. The editor notes, however, that some of these topics have been covered in other recent symposia.

There are a few minor criticisms of this issue which in no way detract from its overall value. In several cases authors (e.g., Silverman) are referred to in the text without a bibliographic reference. A few of the photographs, as those on pp. 31, 34, 37 seem superfluous.

This symposium, however, well fulfills its purpose of providing for all interested in obstetrics and gynecology, a valuable source of authoritative information.

Lawrence D. Longo, M.D.

New Drug Termed Promising Against Resistant Germs

A "promising new antibiotic" has produced good results in patients with infections resistant to penicillin, it was reported in the September 1 *Journal of the American Medical Association.*

The drug, generically termed oxacillin, was designed to fight penicillin-resistant strains of staphylococci, bacteria which present a thorny medical problem because of their prevalence and increasing resistance to other antibiotics.

Studies have shown that strains of staphylococci are resistant because they produce penicillinase, the biologic antagonist of penicillin.

Oxacillin is a synthetic penicillin which resists destruction by penicillinase, William M. M. Kirby, M.D., Lona S. Rosenfeld, M.D., and Jean Brodie, B.S., department of medicine, University of Washington School of Medicine, Seattle, wrote in the *Journal.*

On the basis of laboratory tests and a study of 68 patients, the researchers concluded that oxacillin is a potent and effective drug when administered orally for the treatment of penicillin-resistant infections. Side effects were minimal, they said.

Good results were obtained in 61 of the 68 patients and rated indeterminate in the other seven, the researchers reported.

At the time treatment with oxacillin was started, 18 patients were considered seriously ill, they said, and in each of these "there seemed a clear-cut response to the antibiotic, and the patient was cured." The seriously ill included six patients with pneumonia, five with severe head and neck infections, and three with infected burns, they said.

In laboratory tests, oxacillin was compared with three other synthetic penicillins and found to be five to eight times more active than one of them (methicillin), against penicillin-resistant staphylococci, the authors said.

"It is apparent from these observations that oxacillin represents an important advance in the therapy of infections caused by penicillinase-producing staphylococci," they said.

THALIDOMIDE AND MALFORMATIONS IN LIVERPOOL—R. W. Smithells, Lancet, 1:1270 (June 16) 1962.

An investigation was made into drugs taken during the first trimester by the mothers of 30 babies with ectromelia, 22 with minor limb deficiencies, 7 with microtia and 40 normal babies. Thalidomide had been taken by 12, 2, 3, and 0 respectively.

* * *

SUMMER OUTBREAK OF INFLUENZA TYPE-B—J. R. L. Forsyth, Lancet, 1:1400 (June 30) 1962.

Two summer outbreaks of influenza type-B differed from the subsequent winter epidemic by the difficulty of isolating the virus and the localization of spread in summer. These differences could reflect changes in the host population or in virus viability.

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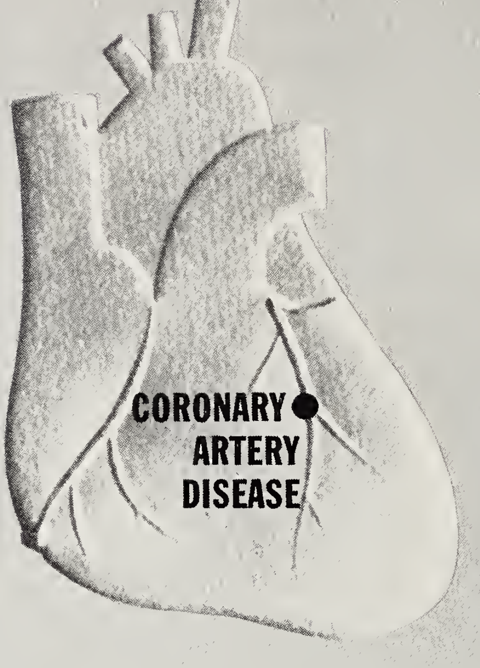

● "...now the leading cause of death in diabetic patients."[1]

Diseases of the cardiovascular-renal system account for about three-fourths of deaths among diabetic patients, with heart disease responsible for approximately one-half the total,[2,3] and coronary atherosclerosis the major cause of cardiac lesions.[1] While some feel that diabetics are predisposed, perhaps by heredity, to early onset of vascular disease, considered opinion is that vascular degeneration can be delayed or modified with "... careful and consistent control of diabetes from the time of diagnosis...."[4]

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References: (1) Root, H. F., and Bradley, R. F., in Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: The Treatment of Diabetes Mellitus, ed. 10, Philadelphia, Lea & Febiger, 1959, pp. 411, 437. (2) Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: *ibid.*, pp. 188-189. (3) Marks, H. H., *et al.*: Diabetes 9:500, 1960. (4) Marble, A., in Summary of Conference on Diabetic Retinopathy, Survey Ophth. (Part 2) 6:611-612, 1961.

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Test Shows Whether Pain Is Psychic or Physical

A test that can show whether pain is physical or psychosomatic was described today by Dr. Leo Alexander, a Boston psychiatrist.

The test is based on the patient's psychogalvanic reflex, a drop in the electrical resistance of the skin in response to physical pain or mental challenge, according to a report by Dr. Alexander in the September 8 *Journal of the American Medical Association.*

The psychogalvanic reflex is one of the impulses recorded in lie detector tests.

Through tests of various psychiatric patients, Dr. Alexander said, it had been noted that the galvanic skin responses of patients suffering physical pain were "strikingly different" from those suffering from psychogenic pain when the natural fluctuations were compared with those evoked by deliberate painful stimulation.

To test the validity of this observation, he studied 20 patients whose chief complaint was pain which could be diagnosed definitely as either physical or psychogenic and, for comparison, an additional 14 patients who were free from pain.

Patients with psychogenic pain were found to have a low rate of natural fluctuations of skin resistance as well as a low level of responses to deliberate stimulation, Dr. Alexander said.

This suggests that psychogenic pain may represent a state to which the nervous system has become conditioned and that, like depression, it may represent an inhibitory state, he said. Spontaneous and evoked psychogalvanic responses have also been found to be greatly reduced in Yoga trance states, he said.

Patients who suffered physical pain showed marked spontaneous fluctuations of skin resistance that corresponded to the waxing and waning of the physical pain while responses to induced stimulation were uninhibited, he said.

This suggests that physical pain impinges upon the nervous system in a manner comparable to that of any other external stimulus or one to which the system is not conditioned, he said.

However, another explanation may be that physical pain states tend to be intermittent and varying, hence evoking apparently spontaneous psychogalvanic responses, while psychogenic pain states tend to be continuous and unvarying, hence evoking less frequent and less marked psychogalvanic responses, he said.

The natural fluctuations of skin resistance among pain-free patients did not differ from the psychogenic pain group but was significantly different from the organic pain group, Dr. Alexander said.

Of the 12 patients suffering psychogenic pain, he said, all but one responded to therapy.

(Continued on Page 70)

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1. Ford, R. V.: Clin. Res. Notes 2:1 (Dec.) 1959. 2. Ford, R. V.: Cur. Therap. Res. 2:92 (Mar.) 1960. 3. Elliott, J. P., Jr., and Goldman, A. M.: South. M.J. 54:794 (July) 1961.

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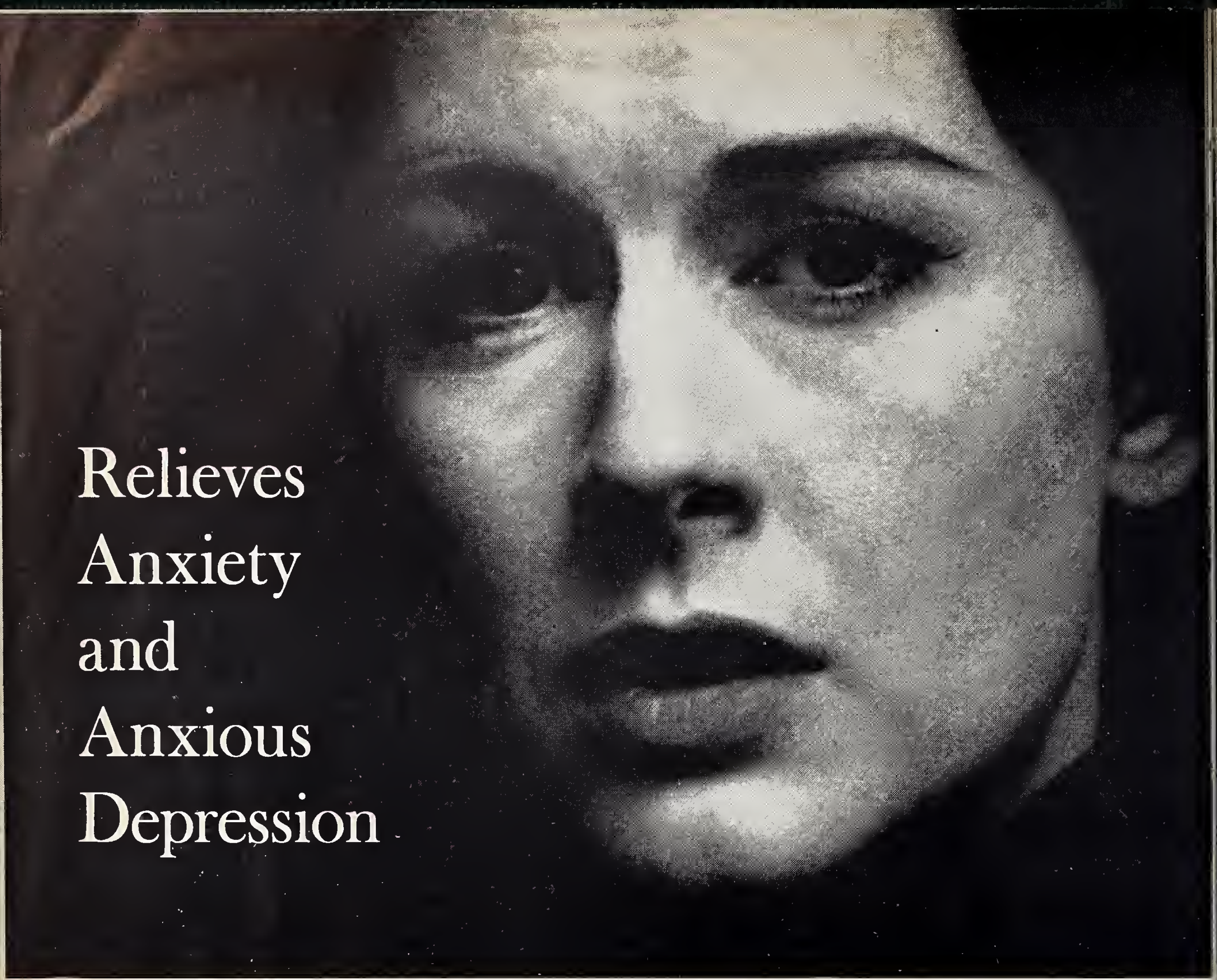

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Salt-Water Retention Seen As Clue to Obesity Control

The body's retention of salt and water during a weight reduction program "may be the greatest single cause of failure in the treatment of obesity," Dr. S. K. Fineberg, New York City, said.

Ten to 20 pounds of water may be retained before there is any apparent sign of edema, medical term for the condition, Dr. Fineberg said in the September 8 *Journal of the American Medical Association.*

"After several weeks or months of fat loss, if water retention occurs, the scale-weight loss stops or even reverses, despite the patient's adherence to the same caloric intake and *actual loss of fat tissue,*" he said. "The perplexed patient assumes that he cannot reduce his weight further and soon abandons treatment."

Apparently, he said, the incidence and severity of water retention is far greater in women.

"This fact may help to explain the higher success rates consistently found in men," he said. "Indeed, the patient's sex has been quoted as the only criterion which might aid in predicting the outcome of attempts at weight reduction."

Dr. Fineberg drew his conclusions from a study of the treatment of 36 overweight diabetics at a special clinic. The patients were all 50 to 100 per cent overweight and were seen at the clinic once a month for periods of six months to one year, he said.

At the end of the year, 23 of the 36 patients had lost an average of about 22 pounds during an average of nine and one-half months, he said. Fifteen patients were able to discontinue specific drugs for diabetes entirely, he said.

"The rate of success attained in this clinic, almost 80 per cent at the end of the first year, is remarkably high," Dr. Fineberg said.

"The reasons for the almost unprecedented success rate obtained are believed to be better motivation, less psychological obesity in diabetics, and improved technique in using anorexigenic [appetite suppressing] agents, but, most important, the detection and correction of water retention in more than one-half of the patients. This well-known phenomenon of unexplained origin has not heretofore been documented as occurring with such persistence and high incidence.

"The experience in this clinic suggests that onset of prolonged salt and water retention during weight reduction may be the greatest single cause of failure in treatment of obesity."

Dr. Fineberg is attending physician and chief of the metabolism service and diabetes outpatient department, Harlem Hospital.

"THE TWIST" FRACTURE DISLOCATION OF PATELLA—D. G. Millard and T. H. Lee, N.E.J.M., 267:246 (Aug. 2) 1962.

A fracture dislocation of the patella has been observed in a young woman during the performance of "The Twist," an energetic, torso-contorting dance.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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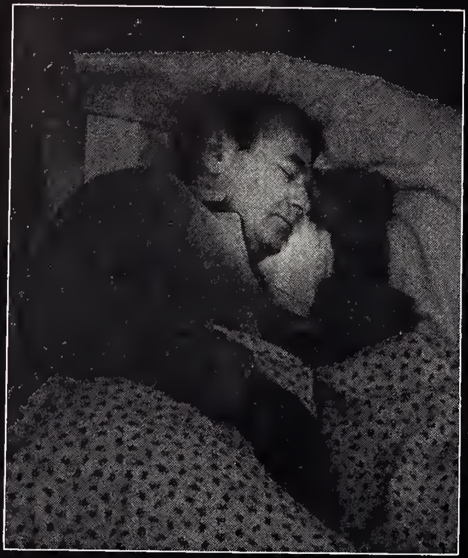

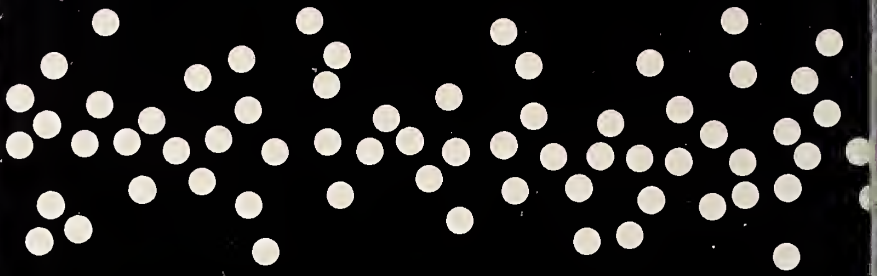

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1. Clinical Reports to the Medical Director, Armour Pharmaceutical Company, 1960. 2. Teitel, L. H., *et al.:* Indust. Med. *29*:150, 1960.

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Birth Records Should Indicate Congenital Limb Deformities

Birth certificates should indicate the presence of congenital limb deformities to facilitate research into their cause and frequency, according to three child amputee experts.

Prevention of disease in general and of malformations in particular requires detection of the causes, and finding the causes often depends on accurate knowledge of their frequency, according to Cameron B. Hall, M.D., Milo B. Brooks, M.D., and Jeannine F. Dennis, O.T.R., Child Amputee Prosthetics Project, University of California, Los Angeles.

The frequency of congenital limb deficiency is unknown, they said in an article in the August 18 *Journal of the American Medical Association.* Present birth certificates do not provide for the recording of such information and it has been included in only a few medical centers, they said.

A method for classifying congenital limb deficiencies, developed by Dr. Ronan O'Rahilly of Wayne University School of Medicine, provides a simple description of seemingly complex and unrelated malformations and should be used in initial birth records, the author said.

Until the rate of occurrence is known, they said, the role of the many factors implicated in these deformities, such as heredity, diet, irradiation, hormones, chemicals and injuries, cannot be evaluated.

The identification of environmental factors contributing to congenital malformation ranks as one of the areas most deserving of research, they said.

Hair Spray Toxicity Questioned in J.A.M.A.

Reports suggesting that the inhalation of hair sprays can cause a new lung disease were questioned in the August 18 *Journal of the American Medical Association.*

Thesaurosis, the term used to describe the excessive retention of certain chemical elements in the lungs, has been attributed to heavy exposure to hair spray, according to Dr. G. W. H. Schepers, Wilmington, Del.

However, he said, there are "many points of similarity" between thesaurosis and pulmonary sarcoidosis, a chronic infectious disease affecting the lungs.

Sarcoidosis is "a great imitator of many diseases," Dr. Schepers said, adding:

"It has been misdiagnosed before and probably will continue to confuse issues in the future."

Sarcoidosis is quite prevalent in the United States, he said, and its manifestations in the lungs are often transient and occur with marked prevalence in women in their 30s and 40s.

"On a statistical basis alone, it seems not un-

(Continued on Page 78)

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*Alexander, F.: Psychosomatic Medicine, New York, W. W. Norton, 1950, p. 101.

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Raddin, J.: Med. Times, July 1961

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Hootnick, H. J.: J. Am. Ger. Soc., 4:1021-1030, 1956

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Marshall, W.: S. D. J. Med. & Pharm., 8:151-153, 1955

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X-Ray Treatment for Asthma Has No Scientific Basis

Any claim that asthma can be permanently cured by x-ray treatment or any presently known method is without scientific foundation, Dr. Jerome Glaser, Rochester, N. Y., a pediatric allergist, said in the September 1 *Journal of the American Medical Association.*

A recently publicized technique is purported to benefit asthma sufferers "by x-ray treatment of infected lymphoid tissue in the sinus cavities and the upper respiratory tract," according to a question submitted to the *Journal.*

"Lymphoid tissue is not found in the sinuses," Dr. Glaser said in answer to the inquiry.

Lymphoid tissue, of which adenoids and tonsils are a part, acts as a filtering station for the watery fluid of the body called lymph.

X-ray treatment of a regrowth of adenoid tissue following the removal of the adenoids and tonsils is an accepted procedure for asthmatic children, he said. This appears to be helpful in many instances by eliminating the source of infection which may trigger asthmatic attacks, he said.

However, such treatment is almost never indicated in adults because with advancing years such lymphoid tissue wastes away, Dr. Glaser pointed out.

An article on x-ray treatment for asthma in a lay magazine touched off a flurry of inquiries to A.M.A. headquarters in Chicago.

Test Shows Whether Pain Is Psychic or Physical

(Continued from Page 61)

The differential diagnosis between physical and psychogenic pain is often difficult, Dr. Alexander said, because physicians are frequently faced with a vexing combination of mental and physical symptoms.

Severe physical pain inevitably becomes associated with emotional suffering, which may evoke emotional disturbances sufficiently severe to mask the physical disease and to simulate mental disturbance, he said.

Psychogenic pain, on the other hand, often causes physical symptoms sufficiently severe to suggest that they are producing the pain, he said.

The psychogalvanic test may prove useful to physicians who must find the physical illness, of which pain may be the first sign, before it is too late, or recognize the psychogenic nature of the pain in order to be able to rehabilitate the patient, he said.

Dr. Alexander is affiliated with the department of psychiatry, Tufts University School of Medicine, and the neurobiologic unit, division of psychiatric research, Boston State Hospital.

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Stomach Freezing Successful In 86 Ulcer Patients

Stomach freezing as a method of treating duodenal ulcers has now been used successfully in 86 patients, according to an article in the September 1 *Journal of the American Medical Association.*

The cases were reported by Drs. Edward T. Peter, Eugene F. Bernstein, Henry Sosin, Arthur J. Madsen, Arnold I. Walder, and Owen H. Wangensteen, Minneapolis. Dr. Wangensteen and associates last May reported the initial trial of the technique in 24 patients.

The technique consists of lowering the temperature of the stomach to around zero for an hour. A ballon is inserted into the stomach through which cold alcohol is circulated to achieve stomach temperatures from four below zero to 10 above zero.

The procedure is "well tolerated" and appears to depress the secretion of digestive juice, the researchers said. The digestive juice containing hydrochloric acid is believed to be an irritant which, when suppressed, allows the ulcer to heal.

Only time will tell how long the secretion is suppressed and whether the procedure will have to be repeated, the authors said.

"Immediate relief of pain has been quite uniform," they reported.

"Healing of duodenal ulcer craters has been observed regularly within two to six weeks.

"The majority of our patients continue asymptomatic and find it unnecessary to observe dietary strictures or to take medication."

The patients ranged from 26 to 82 years, with the majority in the fourth, fifth, and sixth decades of life, they said. Most of them had been seriously considering an operation for relief, they said.

"The simplicity of the method and its effectiveness in the management of duodenal ulcer suggests it to be worthy of extended and careful trial," they said.

In addition to patients with ulcers of the duodenum, the first part of the intestine leading from the stomach, the technique also has been used for a few patients with problems of the digestive tract "with improvement," they said.

So far, they said, they have had limited experience in treating patients with stomach ulcers with the freezing technique. However, they said they plan to explore the possibility of using the method to prevent recurrences of ulcers in the stomach once they have healed.

The researchers are affiliated with the department of surgery, University of Minnesota Medical School.

ASCITES IN SARCOIDOSIS DUE TO PERITONEAL INVOLVEMENT: REPORT OF A CASE—Wong, Maylene and S. W. Rosen. Ann. Intern. Med.—57:277 (Aug.) 1962.

This report describes a case of ascites due to peritoneal sarcoidosis. This is a rare finding in sarcoidosis, and the clinical and histologic requirements for an acceptable diagnosis are emphasized.

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Exploding Golf Ball Can Injure Eye

Exploding golf balls have caused a number of eye injuries, according to Dr. William H. Havener, Columbus, Ohio.

The explosion is caused by the sudden release of a liquid rubber compound contained under pressure in the center of the golf ball.

In a question submitted to the July 14 *Journal of the American Medical Association*, a case was described in which such an explosion occurred while a boy was tying to "peel" a golf ball. Particles of the rubber compound became embedded in his eye.

Dr. Havener said he had seen similar cases. The injured eye responds to treatment within a week or so, he said.

Hair Spray Toxicity Questioned in J.A.M.A.

(Continued from Page 68)

likely, therefore, that pulmonary sarcoidosis will from time to time appear in women who use hair cosmetics abundantly since this practice is the current, well nigh universal vogue," he said.

"It would seem that a more specific criterion should be found by means of which to differentiate between true thesaurosis and sarcoidosis coincidental to hair spray exposures."

The appearance of lung tissue, which forms the basis for a diagnosis of thesaurosis, is the same in many cases of sarcoidosis, including men who have not been exposed to hair sprays, he said.

"In view of the close . . . similarities between sarcoidosis and certain examples of thesaurosis, the question is raised whether some cases of alleged thesaurosis may be instances of pulmonary sarcoidosis coincidental to exposure to cosmetic hair sprays," Dr. Schepers said.

Attempts to reproduce thesaurosis in experimental animals have, thus far, been unsuccessful, he pointed out.

Dr. Shepers is affiliated with the Haskell Laboratory for Toxicology and Industrial Medicine, E. I. du Pont de Nemours and Company.

CHANGES IN EGO STRENGTH FOLLOWING PERCEPTUAL DEPRIVATION—G. D. Cooper, H. B. Adams, and R. C. Gibby. Arch. Gen. Psychiat.—7:213 (Sept.) 1962.

This study investigated the hypothesis that positive changes in ego functioning would occur in psychiatric patients following a few hours of perceptual deprivation and social isolation. Cartwright's modification of Klopfer's Rorschach Prognostic Rating Scale was used as a measure of over-all adequacy of ego functioning. The results supported the hypothesis. Significant increases were found on the over-all scale score and on two of the three component scores. A second finding was that subjects who functioned least adequately prior to deprivation showed the most improvement after exposure to deprivation. The changes observed on the Rorschach measures were consistent with previously reported postdeprivation changes in overt symptomatology. It was suggested that sensory deprivation techniques might have considerable therapeutic utility with certain classes of psychiatric patients.

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Simple Screening Test Found For Kidney, Bladder Cancer

A simple test for detecting cancer of the kidneys and bladder in the "potentially curable stage" before symptoms become apparent was described in the September 15 *Journal of the American Medical Association.*

Widespread use of the test to screen ostensibly healthy persons could reduce mortality from such cancers in much the same way as the Pap smear test reduced deaths from cervical cancer, according to the *Journal* article.

Silent maligant tumors of the kidney and bladder can be detected by measuring the activity of an enzyme, lactic dehydrogenase (LDH), through urinalysis, Drs. Warren E. C. Wacker and Lionel E. Dorfman, Harvard Medical School, Boston, reported.

"It is clear . . . that diagnosis of these cancers would be made in a significantly earlier stage, with a consequent reduction in mortality, if the measurement of urinary LDH activities were made a routine determination on asymptomatic individuals undergoing hospitalization or periodic examination," they said.

Successful treatment of malignant disease is influenced more by early diagnosis than by any other factor, they said. Deaths caused by cancer of the urinary organs continues at a high level with one-third to one-half of these patients already incurable at the time they first seek treatment because of the late appearance of symptoms, they said.

In a study of 31 patients, LDH activity was abnormally high in 18 of 19 patients with cancer of the kidney or bladder, the only exception being a patient whose tumor-bearing kidney had been removed, the researchers reported. Six of the patients with elevated LDH activity were not suspected of harboring a cancer before they were hospitalized, they said.

Of 12 patients with benign conditions mimicking malignancies, 5 had elevated LDH activity, they said. Although the elevated enzyme activity could be explained in all but one, they said, further study is necessary to determine if the LDH test can be used to differentiate between benign and malignant conditions.

The "extreme sensitivity" of the test was demonstrated by one patient whose LDH activity was only slightly elevated and who had only a small, low-grade, malignant tumor of the bladder, the authors pointed out.

An elevated urinary LDH activity occurs in a number of serious kidney diseases as well as in patients with cancer of the kidney and bladder, the researchers said. However, the differentiation of these diseases from cancer is easily accomplished, they said.

LDH activity in blood and other body fluids has been used widely in the diagnosis of a large number

(Continued on Page 38)

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Real Doctors Think TV Doctors Practice Good Medicine

Many physicians think TV's M.D.'s on such shows as "Dr. Ben Casey" and "Dr. Kildare" practice good medicine, according to an article in the October *Today's Health* magazine, published by the American Medical Association.

The article, which tells the story of the A.M.A.'s Physicians Advisory Committee on Radio, Television, and Motion Pictures, quotes Dr. Eugene Hoffman, Los Angeles, its chairman, as saying:

"Television and motion pictures are practicing good medicine.

"The dedication to the profession and the sincere personal interest in the patients exhibited by the residents and interns on the Casey and Kildare shows, their financial plight, and their inner workings have given the public an accurate picture of the long, tough struggle to become a practicing physician."

Jim Reed, director of the A.M.A. Communications Division, voiced much the same view.

"Our mail indicates that the majority of physicians believes that such programs have given the public an appreciation of the medical profession that is favorable," he said.

"The few criticisms we have received from doctors have been based on differences of opinion on certain techniques or because of dramatic license in some particular area."

Typical of comments from practicing M.D.'s was one received by Dr. Hoffman, which said:

"These medical shows are doing more for our medical profession than anything that has come before, and I think that you and your committee deserve a great deal of credit for keeping the whole concept authentic and real."

The American Medical Association advisory committee was formed six years ago in response to an appeal by film and TV producers to aid in insuring medical accuracy on the air and in the movies. Today the committee functions mainly in Hollywood and New York with nine members on the West Coast and three in Manhattan.

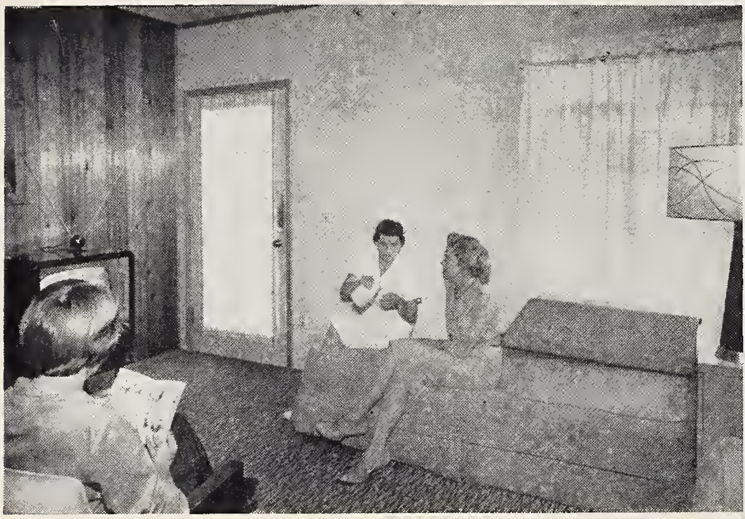
More than 3,000 film companies are producing material for television, the article said, and there are about 1,000 independent producers and writers. The committee checks scripts before they are put into production, it said. Usually, only minor changes need to be made, although some scripts are rejected altogether, it said.

Producers and directors make more than 200 calls a week to the West Coast office, the article pointed out.

But in spite of the care and watchfulnes of the committee, Dr. Hoffman said, minor slips are made.

"Fortunately, television's patients don't sue for malpractice, but doctors and nurses who watch the show don't hesitate to call our hand," he said.

The article was written by Larry Wolters.



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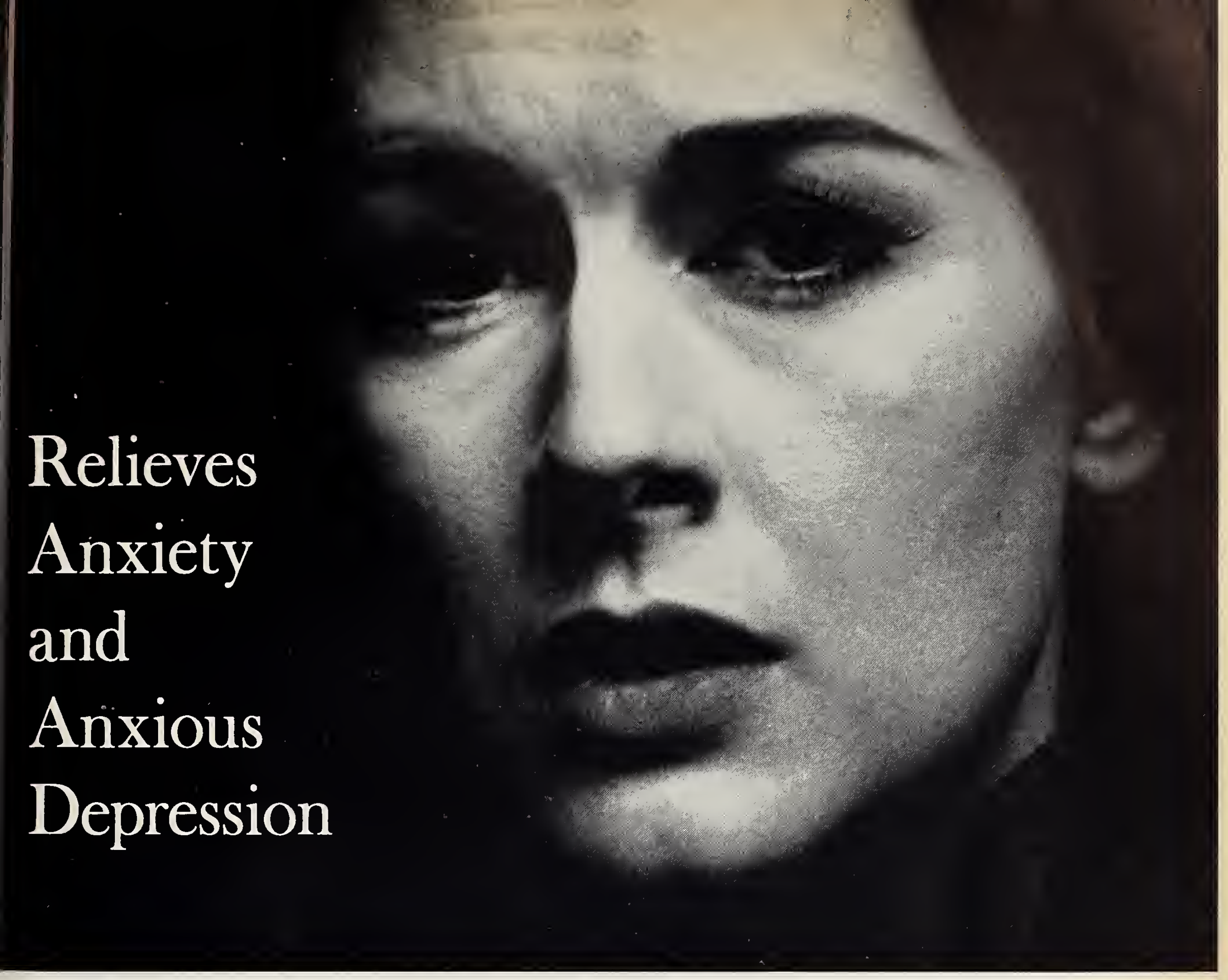

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Obesity, Social Class and Mental Ills Related

Obesity is more prevalent among persons of low socio-economic circumstances and is associated with certain mental disturbances, a study of 1,660 New Yorkers showed recently.

"Obesity is seven times more frequent among women of the lowest socio-economic level than it is among those of the highest level; among men the same relationship exists, although to a much lesser degree," Mary E. Moore, Ph.D., and Albert Stunkard, M.D., Philadelphia, and Leo Srole, Ph.D., Brooklyn, N.Y., reported in the September 15 *Journal of the American Medical Association.*

Some 30 per cent of the women in the lowest socio-economic category were obese and this percentage tended to decrease with increasing socio-economic status until, in the highest socio-economic status category, only 4 per cent were obese, they said.

Although previous investigations have suggested a relationship between obesity and social class, they said, "this is the first controlled study, as far as we know, that has demonstrated it."

The study also showed that obesity increased in prevalence with increasing age and declined among older age groups, "probably due to the increased mortality rates among older obese persons."

This "supports the notion that increase in body weight with increasing age is a biological characteristic of man, as of so many mammals," the researchers said.

Because of the effect of age and socio-economic conditions, these factors were held constant in analyzing the psychiatric aspect of obesity, they said. Results of psychiatric tests showed that the obese persons scored lower on mental health than those of normal weight. Specifically, the overweight were more immature, rigid and suspicious to a significant degree, they said.

"Our results do not indicate whether the mental health factors are causes of obesity or the results of being obese in a society that devalues obesity," they said.

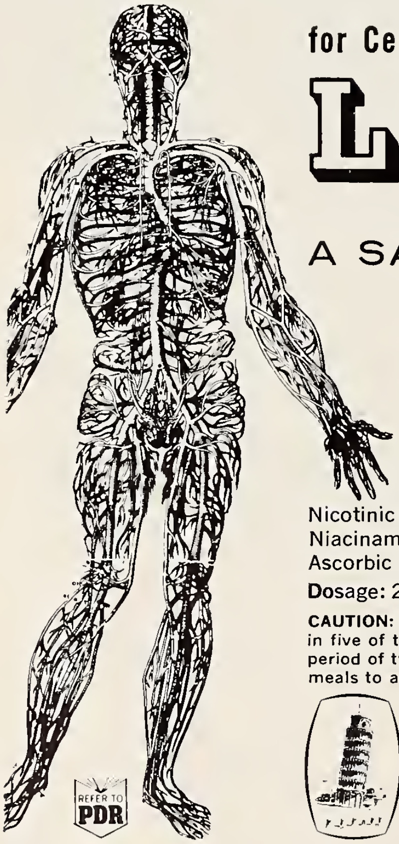
Documentation of the prevalence of obesity among low socio-economic groups has "profound implications," the three researchers said.

"For it means that whatever its genetic and biochemical determinants, obesity in man is susceptible to an extraordinary degree of control by social factors," they said.

It suggests that a broad-scale assault on the problem need not await further understanding of the physiological determinants of obesity. Such an assault might be carried out by a program of education and social control designed to reproduce certain critical influences to which society has already exposed its upper-class members."

Some of the pessimism about the control of

(Continued on Page 48)



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REFERENCES AND REVIEWS

CLINICAL APPRAISAL OF CYCLOPHOSPHAMIDE IN MALIGNANT NEOPLASMS—H. L. Atkings, H. G. Gregg, and G. A. Hyman. Cancer, 15:1076 (Sept.-Oct.) 1962.

Cyclophosphamide was administered to 87 patients, almost all of whom had solid tumors. One-third of the patients showed some response to the drug, and complications were few. The drug seemed to be most promising in undifferentiated uterine carcinoma, carcinoma of the ovary, and reticulum cell sarcoma. Leukopenia without thrombocytopenia appeared regularly. Alopecia occurred in 20 per cent of the patients.

* * *

I. ANALYSIS OF THE IMMUNE AGGLUTINATION OF RED CELLS—H. S. Goodman. Transfusion, 2:327 (Sept.-Oct.) 1962.

The influence of immunologic factors such as antigen and antibody heterogeneity, number of antigenic sites, and temperature on agglutination were demonstrated. A quantitative agglutination procedure was used.

* * *

II. ANALYSIS OF THE AGGLUTINATION REACTIONS CHARACTERISTIC OF THE RH SYSTEM—H. S. Goodman and L. Masaitis. Transfusion, 2:332 (Sept.-Oct.) 1962.

The failure of blocking Rh_0 antibody to agglutinate Rh positive cells in saline was found to be due to a disparity in the binding power of the bivalent sites of the antibody molecule. Antiglobulin antibodies link two stably attached antibody molecules. Enzyme treatment of red blood cells produces agglutination by increasing the binding power of the Rh_0 antigen. The weak agglutination of Rh_0 (D^u) cells is due both to a deficiency of the number of antigenic sites and the weakness of their antibody binding.

RH_0 VARIANT—D^u: I. ITS FREQUENCY IN A MIXED POPULATION; II. ITS DETECTION WITH DIRECT TUBE TEST—P. Sturgeon. Transfusion, 2:234 (July-Aug.) 1962.

To estimate the frequency of ccD^uee in the Los Angeles blood donor population, a survey based on an initial screening with Anti-D of 18,365 bloods was made. Approximately 14 per cent (2,635) were D negative; among these, 244 were either C, D^u, and/or E positive. Seven type ccD^uee bloods were found, five from negroid and two from caucasoid subjects. The respective incidence in the two groups was found to be 1 in 6,000 and 1 in 500 of the total population or, in the Rh negative population, 1 in 1,000 and 1 in 25. A direct tube "stick" test for D^u is described. This requires a high protein reagent and forceful centrifugation.

* * *

GRANULOMATOSIS INFANTISEPTICA—P. H. Moore and B. G. Brogdon. Radiology, 79:415 (Sept.) 1962.

A case of granulomatosis infantiseptica due to *Listeria monocytogenes* is recorded to illustrate the major features of this disease. The radiographic finding of a diffuse miliary or granular infiltrate superimposed on emphysematous lungs in a critically ill premature or newborn infant delivered of a febrile, or recently febrile, mother suggests the diagnosis.

* * *

RESULTS OF TREATMENT IN GLOMUS JUGULARE TUMORS WITH EMPHASIS ON RADIOTHERAPY—J. D. R. Miller. Radiology, 79:430 (Sept.) 1962.

Forty cases of biopsy-proved glomus jugulare tumor (five cases in a personal series, 35 from the literature) have been reviewed and divided into two groups on the basis of clinical features. From the results of treatment it appears that

(Continued on Page 66)

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References: 1. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent. **37**:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: Pediat. Clin. N. Amer. 2:527-538 (May) 1955. 4. Hootnick, H. L.: J. Amer. Geriat. Soc. **4**:1021-1030 (October) 1956.

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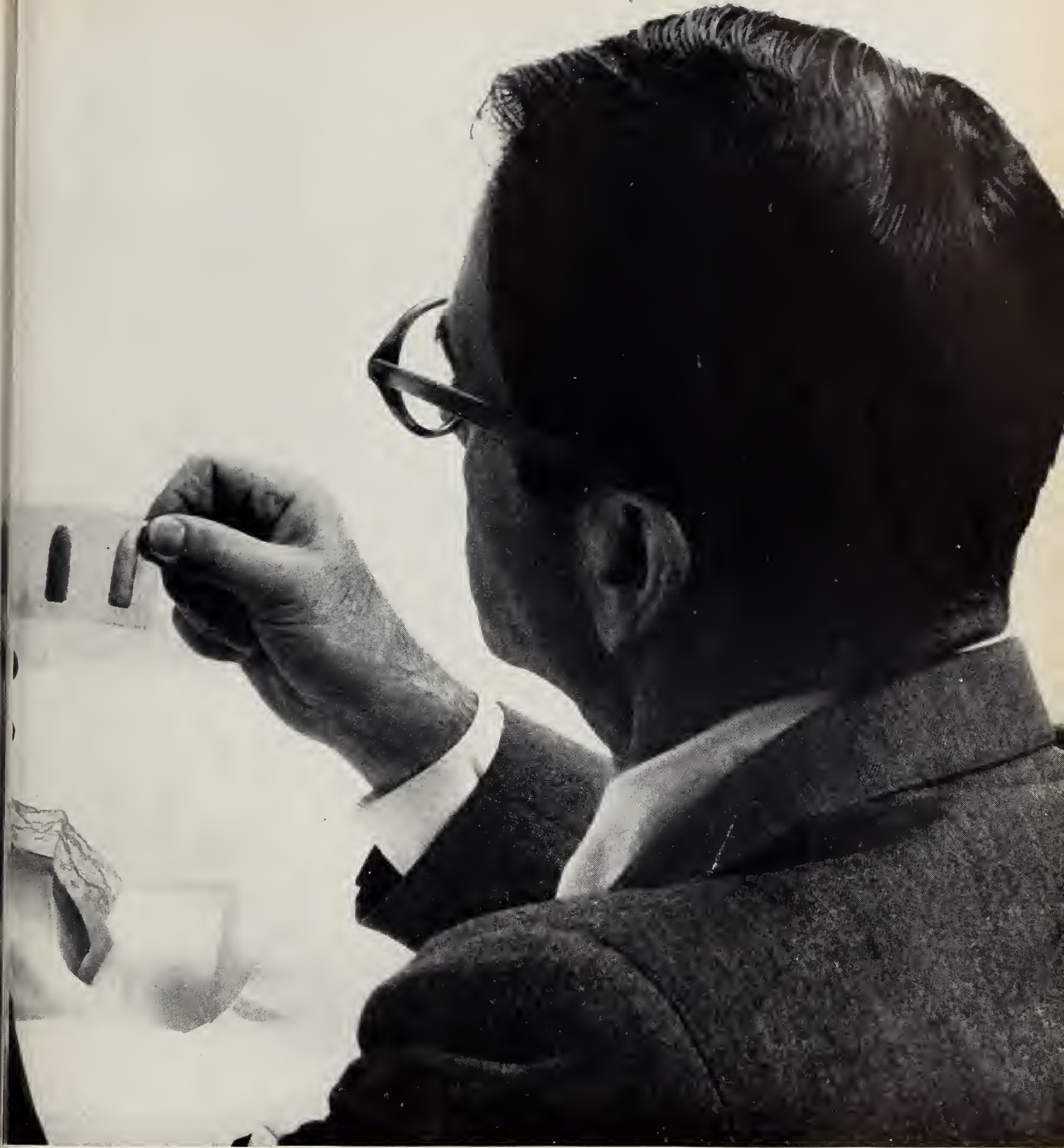

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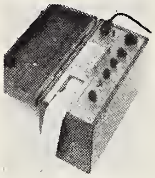

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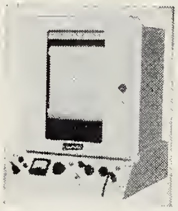

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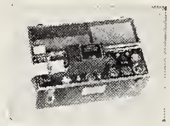

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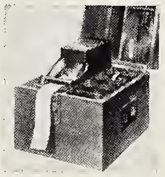

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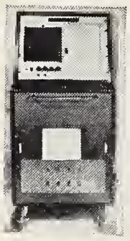

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Pillow Feathers Blamed in Baby's Fungus Disease

Chicken feathers in a 30-year-old pillow were blamed for causing a fungus disease in a three-month-old boy.

The case was reported by Hugh E. Evans, M.D., and John P. Utz, M.D., Bethesda, Md., and Charlotte C. Campbell, B.S., Washington, D.C., in the September 15 *Journal of the Americal Medical Association.*

The disease, histoplasmosis, is caused by the fungus, histoplasma capsulatum, and is generally contracted by adults from soil contaminated with the fungus.

In previously reported cases in infants the source of the infection was not known, the authors said.

During an extensive search of this patient's environment, they said, the fungus was found only in feathers of the pillow used by the baby, which had been brought to this country from Hungary 13 years ago.

"At this age he had intimate and prolonged exposure to his pillow, and it is, therefore, reasonable to assume that this was the mode of infection," they said.

Simple Screening Test Found For Kidney, Bladder Cancer

(Continued from Page 18)

of diseases, including heart attacks, blood clots in the pulmonary artery, and cancer, they said. However, data from 200 patients indicate that urinary LDH activity is not significantly correlated with blood LDH activity, they said.

The development of a method of measuring urinary LDH activity was made possible by the discovery of substances that inhibit LDH activity which have been found in all urinalyses, the researchers said. Once these inhibitors are removed by a separation process, they said, determination of LDH is as simple as that for the enzyme in blood.

The finding of an elevated urinary LDH activity in patients with cancer of the bladder or kidney could have been anticipated on the basis of the disturbed biochemistry of malignant cells, according to an editorial in the same *Journal.* Tumor cells appear to be dependent on a chemical process in which LDH plays a cardinal role, it said. The measurement of LDH activity in fluids that are in direct contact with malignant cells has been used previously as a diagnostic indicator, it said.

To apply this knowledge to urinalysis required the recognition and elimination of inhibitors of LDH activity which was possible only through an understanding of enzymatic reactions, the editorial said. Thus the development of this screening is "another example of the benefits to be derived from advances in dynamic biochemistry made during the past several decades," it said.

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SUPPLIED: 5 mg., 10 mg. and 15 mg., in bottles of 30. (Each capsule contains dextro amphetamine sulfate, 5 mg., 10 mg., or 15 mg.)

Prescribing information adopted January 1961.

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Mild High Blood Pressure Treated with New Drug

A new drug, mebutamate, has proved useful in the treatment of patients with mild forms of high blood pressure and "may have broad potential application," according to an article in the September 22 *Journal of the American Medical Association.*

Drs. A. C. Corcoran and Hubert F. Loyke, Cleveland, reported results obtained with the drug in treating 40 women between 35 and 60 years of age suffering early, mild high blood pressure or high blood pressure caused by hardening of the arteries.

These two types of high blood pressure are believed to be the most common among patients treated by physicians in office practice, they said, and a growing body of evidence and opinion favors treatment of such cases.

Mebutamate is a derivative of meprobamate, a widely used tranquilizer, the authors said, but mebutamate is "several times more effective" in lowering arterial pressure.

Mebutamate lowers blood pressure through a calming action on control centers in the brain and spinal cord, the researchers said. Over-activity of these centers characterizes the so-called "neurogenic" phase of the early stage of the disease as well as most cases of established hypertension, they said.

Mebutamate should be considered a mild blood pressure depressant and is not indicated for patients with severe, progressive or complicated disease who require a more powerful drug, the authors said.

The drug has a short term of action and must be taken three or four times a day, they said. It also causes sedation in some patients, they said.

However, no serious side effects characteristic of other antihypertensive drugs resulted from mebutamate during a period of nearly one year, they said.

Mebutamate "would seem a safer, if somewhat less predictably effective agent" than other currently used drugs for initial treatment of hypertensives who do have unusually severe, unduly complicated, or rapidly progressive disease, they said.

The researchers are affiliated with the hypertensive clinic, division of medicine, St. Vincent Charity Hospital.

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Obesity, Social Class and Mental Ills Related

(Continued from Page 32)

obesity and the preoccupation with individual psychological factors that has stemmed from the study of upper-class obese persons may not be justified when considering the numerically far more important lower-class groups, they said.

"Perhaps, for example, simple but energetic information programs directed to the appropriate groups could achieve far more than has been thought possible," they said.

"Agencies for this purpose are plentiful. Well-baby clinics and child care centers deal with precisely the social groups in which the problem is most pronounced and with just those persons who determine the family eating patterns. Union, company, and municipal health programs reach a significant part of the men in the crucial social classes.

"A program directed toward these groups could bring the control of obesity, for the first time, within the capacity of traditional public health measures. And the economy of shifting the emphasis from individual medical to public health measures would make an informed large-scale attack on the problem feasible."

The data which formed the basis for these conclusions were collected as part of the Midtown Manhattan Study, a comprehensive survey of the prevalence of mental illness, the authors said. The segment of the population involved in the overall study was a group of 110,000 men and women between the ages of 20 and 59 who occupied a certain residential area of New York City, they said.

Review of Oral Hypoglycemic Agents—W. S. Metzler, Canad. Med. Assn. J., 87:346 (Aug. 18) 1962.

This review embraces early development of oral hypoglycemic drugs. Possible errors in administration of too low initial dosage in the sulfonylureas have been pointed out. It is indicated that these hypoglycemic agents are established now as a form of therapy in a small group of diabetics. It is of value to the physician to learn the basic rules regarding their use.

California
MEDICINE
OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION
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Volume NOVEMBER 1962 Number 5

The Hazards of Radiation

EDWARD TELLER, *Ph.D.*, Berkeley

Ladies and Gentlemen, it is a very great honor for me to be with you today and it is a particularly great honor to be asked to give this lecture in memory of our good and very great friend, Dr. Ernest O. Lawrence. In his life he has done a great many remarkable things. He was a builder, and the influence of his work reached from the investigation of the nucleus to national defense and from there again, very significantly, to the health of all of us. When he developed the instrument for accelerating particles, a development in which he stands above everybody, he had in mind all along to use the new nuclear tools for the purposes of medicine. In the Radiation Laboratory isotopes have been produced at an early time and there were many years when the Radiation Laboratory was *the* source of isotopes for the whole world. Because of his initiative and enthusiasm we in this country have a very considerable headstart in nuclear medicine.

This is a headstart which we have used well. I shall mention two very obvious uses. One concerns our fight against the greatest remaining danger to human health: cancer. At least in certain stages some cancer cells are more sensitive to radiation than the rest of the body. Thus radioisotopes can be of help in the treatment of cancer. The other point is even more important. With the help of isotopes one can follow the particular way in which any element goes through the complicated maze of biological activity, and in this way we can have a detailed and instructive insight into biochemical processes.

In addition to these great fields that I have mentioned, Ernest had a deep interest in one thing. He saw that the scientific results concerning radiation have been misunderstood, and he tried to set the record straight. It is this topic which I want to discuss with you today.

We have all heard about radiation hazards. We all know that people are greatly worried about these hazards. This danger has been exaggerated. There is a story which many of you may have heard, but I will repeat it because it illustrates Ernest's interest in this particular point.

When the 37-inch cyclotron started to function in 1935 and when neutrons began to come out of this instrument, one of the very obvious questions was whether the effects of the neutrons will be similar to the effects of x-rays, gamma rays, electrons, alpha particles and other radiation. Because this question arose, Dr. John Lawrence and Dr. Paul Aebersold rigged up a little apparatus with a rat inside, which had to be jammed into a very narrow space in the cyclotron. The rat confined in this narrow space was supplied with air which came through a little tube. The cyclotron was turned on. It ran for two minutes; Ernest said we better stop, look and see. He stopped and looked and the poor rat was dead. This caused an enormous consternation because the rat did not get a really big dose. It appeared that the neutrons were much more dangerous than any other radia-

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Presented as part of a Symposium on Disaster Medical Care given at the 91st Annual Session of the California Medical Association, San Francisco, April 15-18, 1962.

First presented at the First Annual (Pioneers in Nuclear Medicine); Lecture—at the 7th Annual Meeting, Society of Nuclear Medicine, Estes Park, Colorado, June 25, 1960.

Reprinted, with minor changes by the author, from the *Journal of Nuclear Medicine,* 3:1, 1962.

Associate Director of Lawrence Radiation Laboratory, and Professor-at-Large, University of California, Berkeley 4.

tion. Well, it took a little time to find out the real story: the tube which supplied the blasts of air to the rat was closed during the test and the rat suffocated.

This, ladies and gentlemen, was the first of many alarms about radiation, and like the rest of the alarms, it had little foundation. Unlike some of the other alarms, however, it had an advantage. It made all the people in the Radiation Laboratory very conscious of the possible danger of radiation, and partly because of care and I should say partly because of good luck, there has been a really excellent record of radiation safety in the Radiation Laboratory.

Starting from these early observations an important conclusion developed: Nuclear radiation and radiation damage is a simple thing. The effect of radiation is to tear molecules apart. There is nothing particularly specific in this. Some types of radiation are two or three times more effective than some other radiation, but by and large any radiation acts in a similar way as long as it gets into touch with tissues. The main question is, how much energy is delivered and to which tissues. Of course, the overall action may appear quite different. You may have penetrating radiation which traverses the whole body, or soft radiation which stops in the skin. There can be radiation from isotopes which are deposited in certain organs, and only these organs will be irradiated. But as long as some tissue is irradiated, the effect of the radiation is reasonably accurately estimated, if not really measured, by the amount of radiation energy delivered to that tissue.

This is in exceedingly sharp contrast with the effects of chemical agents which have a key and lock property. A molecule in which you have made a little substitution can change from a food into a poison. And to predict, on the basis of chemical evidence, the biological effects is beyond our present knowledge and may remain so for some time. Therefore, to begin with, radiation is a much simpler agent. But I hope that you will not draw the conclusion from this that therefore its effects upon us are simple. While radiation is simple, we unfortunately are complicated. You do something to us, and God knows how we are going to react.

The topic which I first want to discuss and which I want to keep in the forefront for quite some time is the danger from the worldwide distribution of radiation—the worldwide fallout from nuclear tests. And this is the very point that some of us, very much including Ernest, have discussed frequently and carefully.

The scare about worldwide fallout is something about which we must have clear understanding, because it interacts with very specific medical problems. As you know, there has been quite a bit of controversy about nuclear fallout. Some people believe—maybe some of you believe—that this controversy has been in part caused by the circumstance that nuclear explosions, nuclear testing and the fallout that comes from nuclear testing has been secret and therefore the general public, even physicians like you, did not have an opportunity to be fully informed. This statement is only partially right. In fact, in the main it is just plain wrong. Information about distribution of nuclear contamination has been kept secret prior to 1953. In the year immediately preceding 1955 all of this information was available to the public. Suspicion did continue that some facts are held back. This is not true. The record is public and the record is complete. Then after the record was complete, radioactivity was dragged into the political arena in the election of 1956.

Let me try to tell you how some propagandists who try to scare the people summarize their argument. Their summary is effective, it is simple, and it has the appearance of fact. The summary goes like this. We know that the exceedingly small doses of radiation which the worldwide distribution of fallout will give to the individual has a very small chance to harm an individual, one chance in 100,000, or perhaps one chance in a million. But there are very many people in the world, and if there is one chance in a million then 3,000 people will be hurt, and if there is one chance in 100,000, 30,000 people will be hurt. We should not hurt thousands of people.

This argument, while it sounds simple and plausible, is wrong. Fallout has so small an effect that nobody ever has observed it. And nobody knows either from direct observation, or from statistics, or from any valid theory whether the claimed damages in fact exist or do not exist. I want to talk about that a lot more, because talking about the effects of various doses of radiation leads us immediately into an interesting field of research which should be important for all of us. The plain fact is that we do not know what are the effects of small doses of radiation.

At this point the oponents of testing argue: "All right, we do not know whether this radiation is dangerous or not. Therefore, wouldn't you think that as long as we do not know whether it is dangerous or not we should abstain from spreading such radiation around?" This again sounds like an eminently reasonable argument, and I would say there is a little bit of truth in it, but only a little bit. There is considerable evidence that the real effects are very considerably smaller than the effects which I have mentioned. I believe that exceedingly few people have been actually harmed by fallout, possibly the opposite may have been the case. Radiation might have beneficial effects.

Before we continue this argument I want to put before you some simple facts. *Fact Number One* I have already put before you: essentially all radiation acts in a similar way. How it will act in very small doses we do not know. But we know that small doses of neutrons, small doses of x-rays, of gamma rays, of beta rays, of alpha rays, and of cosmic radiation will all act very similarly. We know this from physical evidence; we know it from chemical evidence; we know it from a concurrence of a great deal of biological information.

Fact Number Two is this: For more than one hundred million years, ever since fish took the courage to emerge from the ocean, all of our living ancestors have been exposed to cosmic rays. And even those of our ancestors who were sheltered by many feet of sea water drank radioactive potassium and other materials; even those were not exempt from radioactivity. The natural background of radiation to which we and our ancestors have been exposed is approximately fifty times as great as the radiation which we get from all the fallout about which you have heard so much. In addition, we are exposing ourselves for good reason to medical x-rays.

Let us consider first only diagnostic x-rays and not the much discussed therapeutic doses. These diagnostic x-rays which an average healthy individual gets in his life amount to about as much as the natural background. Therefore, the amount of radiation that the average individual is getting is one hundred times as great as the fallout which we are getting. More than that, natural radiation changes from place to place a great deal. You are courageous people for having come up here to Colorado. Do you realize that you are 7,000 feet closer to the sky, that there is less air between you and the heavens, and the cosmic radiation, which is much stronger than fallout, is beating on you with a much greater intensity than any you could expect from fallout even where fallout is concentrated. I do not know how many of you are as foolhardy as I am to carry a radioactive wrist watch which is hardly visible to your eyes if you try to look at it at night, but nevertheless sends a Geiger counter into frantic activity. The natural background about which we usually do not hear, about which we usually do not worry is greater and its changes from one place to another are greater than anything you can expect from fallout. This natural background will be different if you are higher up. It will be different and greater if you live in a brick house. It will be different if you change your diet. It will be different if you live in a part of the country where there is a little bit more thorium or uranium in the ground. All the prophets of doom are silent about these dangers which are much greater than the dangers about which they preach.

Could it conceivably be that, knowingly or not, these people are worrying about something else than radiation when they talk about fallout. I understand, gentlemen, that we here are modest people, interested in nuclear medicine and not in psychiatry or politics. Therefore, this last question I will have to leave unanswered.

I would like to make an appeal to you. A few years ago there has been introduced a concept which seems useful—the maximum permissible exposure of a person. I say that this concept seems useful. I also say that this concept is most disturbing, misleading, dangerous, and that you should get rid of it. We do not know what the effects of small irradiations are. Therefore we cannot tell what is the maximum permissible exposure. And since most of the people who make such decisions are conservative, they set the maximum permissible exposure as low as possible so as to be really safe. Probably ten or one hundred times the permissible dose will not cause damage either. Yet, figures are published and then somebody finds out: "I've had 20 per cent of the maximum permissible exposure. I have gone 20 per cent towards some kind of a disaster which I do not understand, but which quite possibly is as bad as getting cancer." The alarm that has been spread by this word, "maximum permissible exposure," has been tremendous. And then the experts get frightened and lower the maximum permissible exposure by a factor 2, and then everybody says: "When will they lower it again? Perhaps I already have the maximum permissible exposure."

Recently better words have been introduced. Instead of "maximum permissible exposure" we should use the "Radiation Exposure Guide," a guide which will be different when you expose the whole population, different and higher for professions, different, still higher in emergency situations where some chances have to be taken. It is also complicated, and I would advocate that we don't talk too much in public about this guide.

I would advocate that we should talk in public about one thing only. We should agree on the average background exposure. Assume the average background exposure is one-tenth of an "r" per year. Let us agree on a firm figure and then let us tell people. The maximum permissible dose is a figment of man's imagination. The average background comes from God, and furthermore since everybody is exposed to it, is a much more reasonable and democratic unit. It is also much more reassuring.

The public has been scared into an unreasonable behavior. Those of you who have the information must talk not only to their own patients but to the public and must counteract the unreasonable and unscientific fear mongers.

I would now like to talk to you about some more interesting questions concerning fallout. What is probably the real danger? It has been estimated by many that due to fallout the lives of some 20,000 or 50,000 people might be shortened. All of this has been based on a very simple hypothesis. And because it is simple, therefore it is plausible. And because it is plausible it is widely used. And because it is widely used it is widely believed. Yet, the connection between this hypothesis and truth is exceedingly tenuous.

The hypothesis is that if one thousand "r" units do a certain damage or do damage with a certain probability, then one "r" unit will cause the same damage with one-thousandth that probability. This statement is based on the single-hit theory, that is, the idea that if one molecule is disrupted, the disruption of this one molecule is irremediable and will produce an ultimate consequence with a fixed probability.

Examples of the opposite abound. We know that something like five hundred "r" units delivered in one dose will kill half the people if they are healthy, and more if they are not. Yet, we know that we can in fractionated amounts deliver one thousand or two thousand "r" units without any danger of short-time injury, although some clear-cut danger of long-range development of some disastrous diseases exists. Proportionality between the dosage and effect is certainly not demonstrated. In fact, there is no good statistical evidence of any damage to the individual, unless that individual got approximately one hundred "r" units. At the same time, if he gets five hundred "r" units in one dose, he has a 50 per cent chance of dying. Therefore the full range in which proportionality between cause and effect can be explored is only a range of five-fold change in radiation. In this range the experiments are complicated and conflicting; some of the evidence clearly contradicts proportionality; other evidence seems to show proportionality but in an unclear manner. The evidence is derived from laboratory experiments, from irradiated populations in Hiroshima and Nagasaki, and it comes from therapeutic applications or radiation. The upshot of these results is that no clear-cut evidence is obtained for proportionality in any pathogenic effect.

There have been animal experiments with low-level irradiation. Even this low-level radiation is one hundred times as great as the fallout, and there are essentially no experiments with as low a level as the fallout. The low-level irradiations have been carried out by Dr. Lorenz in the National Institute of Health, Dr. Carlson at Washington State. There are some indications that when you expose mice and rats to these low-level radiations, these animals live 10 per cent longer. Many people say the evidence is incomplete, and I must add on my own—they look incomplete to me. I don't know whether the evidence is conclusive. The simple fact is that when you get to very low levels of irradiation you do not know whether the effect is proportional to the first power of the radiation, whether it is proportional to a high power of radiation, whether it has a threshold so that below that threshold there is no damage or whether below a certain threshold there even are beneficial effects.

Radioactive waters used to be advertised as beneficial. This claim was unscientific. But the opposite claim that all radioactivity is harmful is not much more scientific either. We simply do not know.

I believe that some effects are proportional but probably only a very few, because most processes in our bodies are likely to be more complicated and are not due to one single event. The very idea that cancer could be caused by one single event flies in the face of general experience like precancerous stages, which shows that cancer develops in several stages rather than being due to one single cause.

Now I would like to mention to you another field about which we have been fully as much disturbed —the genetic effects of radiation. In the genetic effects the situation is different. Very detailed studies have shown that irradiation of the spermatozoa of fruit flies gives rise to mutations strictly proportional to the dose, and therefore proportionality has been demonstrated in a wide range between twenty-five "r" units and four thousand "r" units. I think this is good, solid, scientific work. But the results are different for the spermatogonia and for the Oocytes. If you have a bare cell nucleus which is stripped down to the genetic apparatus and contains nothing else, like the spermatozoa, then indeed the effects are simply proportional to radiation, and the single-hit theory seems to be supported. If you deal with spermatogonia, the situation is more complicated. Then you deal with a cell nucleus and a cell body and the effects of radiation depend on the dose rate. The effect becomes smaller if instead of a single dose you fractionate your dose. Repair mechanisms seem to become possible, and only strong irradiation in one dose is really damaging. The same seems to hold for the female cells, for the ovum. In worldwide fallout the dose rate is small. Spermatogonia and oozoa may not be damaged at all.

We have heard that fallout produces a terrific genetic burden. To begin with, radiation from fallout is only 1 per cent of the radiation which we are getting anyway. Secondly, I do not think that all mutations are harmful. All mutations of course are abnormal because only what is not mutated is what we call normal; and as every reasonable group of individuals we believe that we are the peak of creation. But really to believe this, not emotionally, but intellectually, would seem to deny the simple fact of evolution. You must allow that something that is new might be better.

Mutations are increased by fallout, but probably by less than 1 per cent. Many mutations in us are probably due to the spermatogonia and oozoa. In these, fallout probably produces practically no effect. Furthermore, some very excellent Swedish research men have pointed out that mutations are caused because we are foolish enough to wear trousers. This causes a temperature change in one of our organs; this will lead to a mutation rate surpassing the effects of fallout more than hundredfold. The Swedish geneticists therefore recommended that the prophets of genetic doom should wear kilts.

There is, ladies and gentlemen, one little point which I would like to make in all seriousness. There can be very little doubt that the modern medical art can keep people alive who otherwise would die. This increases the number of surviving mutations. For instance, a person who has diabetes can live longer and have children. This probably increases the genetic burden much more than fallout. In a humanitarian sense it is obviously correct to save lives. Furthermore, I do not think that this is necessarily a disadvantage from the point of view of the evolution of the race. Why do we have mutations? Due to mutations we can adapt ourselves. Can you think of an age which changes more rapidly than ours? Can you think of an age where adaptation is more necessary than it is in ours? By allowing more mutants to survive we allow more adaptation. Perhaps those among us who have diabetes and who can now be kept alive have a linked property of being temperamentally more suited to live peacefully with their neighbors. Perhaps they are on the average more intelligent. Nobody knows. I think that the expression, "genetic burden," is ill chosen.

Fallout is not dangerous. But the fallout scare is. Many people know that a medical x-ray gives you one hundred times as great a dose as fallout will give you in your whole life-time. How many people have been scared away from x-rays? How many people have gone with their ailments unrecognized and untreated, only because there has been this needless and exaggerated fallout scare? I don't know. I don't know whether anybody has been killed by fallout, but I am sure that many have been killed by the fallout scare.

There are many cases in which people were frightened away from the much more massive therapeutical doses. A year ago my sister had trouble with her thyroid. The tissue had to be removed either by an operation or by the iodine treatment. You all know that the operation has some small hazards. You know also that radioactive iodine treatment is simple, painless and safe. My mother, who is a great worrier, almost prevented the iodine treatment, and it took all my eloquence to put it through. I wonder how many are the cases in which people have abstained from needed radiation treatment because of the fallout scare. There must be many, many such cases.

It is not unusual that in a serious case of cancer, a surgeon will undertake an operation, which is dangerous. He will tell the patient that there is a chance that he will die during or immediately after the operation, and in such a serious operation it is not at all unusual to accept a hazard, of let us say 20 per cent. As far as I know, in the case of radiation treatment no hazard is ever accepted. If there is a hazard of death we abstain from the treatment. I do not see any logical or sensible reason for this distinction. Either the procedure of the surgeon is too radical or else our procedure with radiation is too conservative. Perhaps our conservatism at present can be defended on the basis that in many cases we may not yet know enough. But in principle there must not be any difference between the two. Radiation damage is considered today as something unknown, new, dreadful, something that has to be avoided under all circumstances. I think this is unrealistic, and I think that this lack of realism has cost many people their lives.

This lack of realism can be removed only by very thorough public education. The problem of explaining radiation hazards is essentially the same whether you explain the practically nonexistent hazard of fallout, whether you explain the hardly more existent hazard of diagnostic x-rays, or whether you are talking about therapeutic x-rays or irradiations which are necessarily hazardous. In all three cases public education is essential, and public education can be undertaken by no one as effectively as by you.

I know that Ernest Lawrence would not want me to conclude my talk without emphasizing some positive aspects of nuclear medicine. We are finding out more about the effects of radiation. This will result in more faith in the use of radiation. It will result and it should result in a wider application of radiation for therapeutic purposes, as a diagnostic tool, and particularly as a research tool.

There are two great killers left. One, the degenerative circulatory diseases; the other cancer. In both of these cases the research that is needed in order to bring help is research which can be done much better with the help of radioactive isotopes than in any other way. With the help of radioactive isotopes you might be able to follow the slow growth, the slow deposition of unwanted substances on the walls of an artery or the slow changes in any other organ. With the help of radioactive isotopes you can find what chemicals will go to this or that cell, to a healthy cell or to a cancerous cell. In this way we might be able to get closer to a meaningful chemotherapy of cancer, whether this be chemotherapy using chemicals that we synthesize or whether it be chemicals of a more complicated kind, which are called antigens. It is even possible that the miracle of the cure of thyroid cancer can be repeated, that we can incorporate radioactive isotopes into some molecules which will seek out the cancer cells even after they have been distributed all over the body, and in this way get rid of a cancerous condition in a stage in which no other method is likely to help.

We have so far used in our radioactive research a relatively small number of radioactive isotopes, namely, those which live long enough so that they can be made and then distributed and then used at leisure. There are many more radioactive isotopes of a short life. Using these you could open up the whole periodic system for the purpose of research and for the purpose of therapeutic irradiation. You might be able to inject a radioactive isotope in a very specific location and before the isotope had much of a chance to migrate away from the location it would have decayed. Of course, if you want to use these isotopes you have to have the source of these isotopes readily available. Fortunately, the sources of isotopes have become very much cheaper. I hope that nuclear reactors might appear in all medical research centers, perhaps in all hospitals. You can inject the activated substance seconds after it has left the reactor and in this way you might be able to use for your research, diagnostic or therapeutic work isotopes which have as short a lifetime as a minute or two. We need these isotopes to unravel biochemistry and to get even closer to this mysterious complication which we call life.

Ernest had a very unusual ability of taking pleasure in progress, quite independently of whether he or someone else made that progress. I hope that this spirit will prevail among us. Only by taking pleasure in our mutual achievements, only by going ahead with confidence and courage, will it be possible to master the enormously complicated field of biochemistry, the science of life.

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Subclinical Hypothyroidism

Recognition and Treatment

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• Often patients in whom there is little to suggest myxedema or cretinism have subclinical hypothyroidism. Once the condition is suspected, it can be diagnosed by determination of protein-bound iodine and, if the PBI is low, by response to therapy with thyroid hormone.

Patients in the following categories should have protein-bound iodine determination: Those having (1) a history of previous treatment for hypothyroidism; (2) suboptimal development in children; (3) ovarian dysfunction, infertility, habitual abortion or unusual menopausal disorders; (4) symptoms of malaise and debility, such as undue fatigue, somnolence, mental asthenia and anxiety; (5) unexplained anemia; (6) colloid goiter, adenomatous goiter and cancer of the thyroid gland.

If hypothyroidism is diagnosed, administration of thyroid hormone in increasing amounts, as determined by serial serum PBI tests, should be carried out indefinitely. Instruction of the patient is essential.

THE INADEQUACY of the basal metabolic rate test for the diagnosis of hypothyroidism was recognized a few years ago when it was learned that a patient with no thyroid hormone in his body whatever could produce a normal rate of oxygen consumption for the brief time of the test. This is apparently due to the extrathyroidal energy mechanisms, such as the central nervous motor or emotional drive, systemic catacholamine action or steroid metabolism. Thus, it became clear that hypothyroidism of lesser degree would usually not be detected if reliance were placed on the basal metabolic rate.

The determination of the serum protein-bound iodine, representing very nearly the amount of circulating thyroid hormone, was demonstrated to be a much more specific diagnostic measure of hypothyroidism, but an equally important illusion in the use of this test has become apparent in clinical practice. For example, a patient may appear to be euthyroid, and have such non-specific symptoms that no clear-cut syndrome of hypothyroidism is present and yet have a serious degree of thyroxine deficiency as indicated by the protein-bound iodine (PBI). Normal appearing patients may have serum protein-bound iodine very much below normal. That these patients do have hypothyroidism is proved by the beneficial effects of administering thyroid hormone. As the PBI is raised to normal, physical signs change, previously unfelt symptoms are demonstrated by their disappearance, well-being is restored, abnormal chemical conditions are corrected and vital functions become healthful, children grow, women ovulate, pregnancy carries through, hypercholesterolemia is reduced, anemia is corrected, fatigue alleviated, fibrositis resolved and mental activity and good spirits increased. But it must be remembered that this therapeutic benefit occurs, except for a few cases described later, only in patients proved to have hypothyroidism by the demonstration of subnormal amounts of circulating thyroxine (PBI) and its correction to a normal level as indicated by the serum protein-bound iodine test. It does not apply to the many patients who have the same troubles but normal serum PBI concentrations.

In our clinical experience,[5] with the benefit of convenient and reliable serum protein-bound iodine determinations,[9] patients having such subclinical hypothyroidism are found frequently. The term *subclinical hypothyroidism* in this connection means "not appearing to have myxedema." It would be wise to screen all patients, with a few exceptions, by determining the serum protein-bound iodine, just as we do a routine urine analysis for diabetes or a blood test for syphilis.[6] More extended surveys of several populations[4] have led us to the conclusion that measurable hypothyroidism is present in the general population to the extent of 5 per cent. If this is true, even if over-estimated by half, the practicing physician should meet this condition frequently.

CLINICAL MATERIAL

The more than 175 cases constituting the clinical material for this paper were drawn from a small private practice. The largeness of the number may be due to the abnormally great index of suspicion of hypothyroidism in this office. These patients may be divided into six categories which have been designated as a result of hindsight—that is, these cases

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Supported by USPHS Grant A2430 and Baxter Laboratories, Inc., Morton Grove, Ill. With the assistance of Mrs. Ruth M. Bourke.

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Presented before the Section on Internal Medicine at the 91st Annual Meeting of the California Medical Association, April 15 to 18, 1962.

TABLE 1.—*Degrees of Hypothyroidism as Indicated by Protein-Bound Iodine Content*

	PBI (micrograms per 100 cc.)
Athyreosis or myxedema	0.0-2.0
Severe hypothyroidism	2.0-3.0
Serious hypothyroidism	3.0-4.0
Probable hypothyroidism	4.0-5.0
Probable euthyroidism (Male)	4.0-7.0
Probable euthyroidism (Female)	5.0-8.0

TABLE 2.—*Distribution of Protein-Bound Iodine Determinations, by Category,* in Present Study*

	PBI (micrograms per 100 cc.)			
	Cases With Less Than 3.0	Cases With 3.0 to 4.0	Cases With 4.0 to 4.5	
Category I	46	56	10	
Category II	10	11	5	
Category III	2	5	4	
Category IV	5	16	....	
Category V	2	3	....	
Totals: Cases	65	91	19	175

*For description of categories, see text below table.

of subclinical hypothyroidism were discovered because the following indications led to the performance of a serum protein-bound iodine determination. The categories are as follows:

I. Previous surgical or isotope treatment of hyperthyroidism (112 cases).

II. Suboptimal development in children (25 cases).

III. Ovarian dysfunction, infertility, habitual abortion (11 cases).

IV. Symptoms of malaise and debility, such as undue nervous and physical fatigue, somnolence, obesity, hypercholesterolemia, headache and backache (22 cases).

V. Idiopathic anemia (five cases).

VI. Colloid or adenomatous goiter and cancer of the thyroid.

Degree of Hypothyroidism

It is agreed by experienced investigators in this field that the range of serum PBI values in apparently normal people is from 4 to 8 mcg. per 100 cc. Degrees of hypothyroidism are indicated in Table 1.

In the present study the distribution of serum PBI determinations by categories was as shown in Table 2.

Examples of patients in the categories shown in Table 2 are presented in the following case reports.

Category I. Hypothyroidism (Neglected) After Surgical or Isotope Thyroidectomy

CASE 1. A woman 31 years of age was first seen in September, 1953. Fourteen months earlier (July, 1952) she had been given 4 millicuries of radioactive iodine for hyperthyroidism, and, as usual, had been told to take ¼ grain (15.0 mg.) of dessicated thyroid twice a day but had been given no explanation of the necessity of determining the quantity of thyroid hormone needed per diem to render her euthyroid.

She did not appear myxedematous but was 16 pounds above her previous weight, and had some premenstrual tension. In eight years of marriage she had not become pregnant.

On physical examination, there was no exophthalmos (bone to cornea measurement, right 15, left 15 millimeters). The pulse rate was 80 and the blood pressure 115/80 mm. of mercury. The thyroid gland was not palpable, Chvostek's sign was not present, the breasts were normal, lungs clear, abdomen "negative." There was no edema or arthritis. Hemoglobin of the blood was 14 gm. per 100 cc. Leukocytes numbered 6,900 per cu. mm. The urine was normal.

The indications for a serum PBI determination were the history of radiation thyroidectomy, infertility and unexplained gain of weight.

The basal metabolism determination, with a good tracing with even respiration, was −13 per cent. The pulse rate was 76.

The serum PBI was 2.0 mcg. per 100 cc. and the serum cholesterol was 317 mg. per 100 cc.

On therapy with sodium levo-thyroxine, now maintained for eight years, the usual PBI is 7.6 mcg. per 100 cc. A BMR determination was +15 per cent with the pulse rate 88.

The patient now has two healthy children. On last examination (April 1961) she was well and strong. Body weight was 108 pounds, the pulse rate 80 and blood pressure 110/70 mm. of mercury.

Category II: Suspicion of Suboptimal Development in Children

CASE 2. The patient was a girl, 6½ years of age when first seen in August 1958. When she was 2½ years old her mother noticed failure of her normal growth as compared with her two brothers. At that time, skeletal x-ray examination showed development equivalent to only nine months. One-half grain (30.0 mg.) of thyroid was prescribed but no attempt was made to increase the serum PBI to normal. After three years of this medication the mother was still dissatisfied with the rate of growth and insisted on consultation. At this time the PBI was 3.8 mcg. per 100 cc. and serum cholesterol 215 mg. per 100 cc. The bone development was equivalent to that of three years of age (i.e. 3½ years delayed). The height was 40 inches and body weight 45¾ pounds. She appeared to be a normal child.

Sodium levo-thyroxine (Synthroid®) 0.1 mg. a day was prescribed. The PBI in six weeks was 7.9 mcg. per 100 cc. A year later, with the patient receiving 0.15 mg. of Synthroid daily, the PBI was 10.1 mcg. per 100 cc. The patient had grown 3¾ inches in 10 months, and decided mental and emotional improvement had occurred.

Nevertheless, a lapse in observation of two and one-half years then ensued, probably because the consultant (the author) did not fully educate the child's intelligent young mother as to the necessity for serial observations during the entire period of growth and maturation.

Now at nine and a half years of age the patient has grown 4½ inches more, to 48¾ inches. She is in the third grade at school. On the prescribed dose of 0.2 mg. sodium levo-thyroxine daily, the serum PBI is 7.6 mcg. per 100 cc., but the bone development is still 1½ years behind the chronological age of 9½. It seems probable that although growth and development have been good from 6½ to 9½ years of age, they have not been optimal. The daily dose has therefore been increased to 0.25 mg. daily, a 25 per cent increase, and the body and bone measurements will be repeated in six months.

One should anticipate a great increase in optimal dosage, since the dose requirement of sodium levo-thyroxine (Synthroid) for young adults is of the order of 0.5 to 0.8 mg. daily.[1]

Category III: Ovarian Dysfunction, Infertility, Habitual Abortion

CASE 3. The patient had had panhysterectomy for menorrhagia and uterine fibroids at age 46. For two years afterward there was continuous lactation, associated with nervous anxiety, hot flashes and somnolence. The appearance of the patient did not suggest hypothyroidism. Blood cell counts were within normal range, as were the blood pressure and the pulse rate. The thyroid gland was not palpable.

The serum PBI was 2.6 mcg. per 100 cc. on one occasion and 2.9 mcg. on another in spite of the fact that she was taking 0.05 mg. daily of ethinyl estradiol. Such estrogen therapy has the effect of raising the TBG* and with it the PBI when additional stores of thyroxine are available from the normal gland or from medication. Hence, the degree of endogenous thyroid hormone deficiency in this patient was severe.

After the patient had been receiving sodium levo-thyroxine, 0.15 mg. daily for two and a half months, the serum PBI was 6.8 mcg. per 100 cc. and the serum cholesterol 225 mg. per 100 cc.

Symptomatic recovery was indicated by cessation of lactation, less fatigue, more endurance, less nervous anxiety and a general feeling of well being, expressed by the patient as "feeling better all over."

Category IV (Women): Symptoms of Malaise and Debility

CASE 4. A 33-year-old mother of three children 8, 6, and 3 years of age went to a physician with complaint of somnolence and dysphagia. She was not anemic, had had no history of miscarriages, was not overweight, in fact, had lost 32 pounds since her last pregnancy, and had no appearance of myxedema. Nevertheless a serum PBI determination was done on the order of the physician and the result was 3.9 mcg. per 100 cc.

She was given ½ grain (30.0 mg.) of desiccated thyroid daily, but a program for attaining optimum dosage was not laid out. After a year of unadjusted medication the serum PBI was 2.9 mcg. per 100 cc. Determined twice more within two weeks the results were 2.4 and 1.7 mcg. per 100 cc. Serum cholesterol, determined at the same times, was 245 and 246 mg. per 100 cc. The serum thyroxine-binding proteins were within normal limits, as follows: TBG 25 per cent, TBA 25.1 per cent, and TBPA 49.3 per cent, following the reverse flow technique of Tanaka.

I^{131} uptake was 10 per cent in 24 hours. A scintigram showed uniform distribution of the 250 microcurie dose. Thymol turbidity and cephalin flocculation tests were normal.

On sodium levo-thyroxine medication begun in daily dose of 0.05 mg. daily and gradually increased to 0.2 mg. daily, the serum PBI in two months rose to 6.5 mcg. per 100 cc. and after four months was still 6.0 mcg.

The patient noted relief of constipation, of right lumbar muscle pain, of muscular weakness, and of apprehension in driving her car, and much more prompt recovery from somnolence. These subjective observations illustrate the dictum that the patient often cannot recognize symptomatically that she has been in an abnormal state of health until after the abnormality has been corrected.

Category IV (Men): Overweight, Hypertension, Hypercholesterolemia

The demonstration of subclinical hypothyroidism in middleaged men is much more dependent on the physical effects of thyroxine medication than on a change of symptoms as it is in the women. Furthermore, the occurrence of lower serum PBI in normal men reduces the chemical borderline. Nevertheless, the value of the prevention of arteriosclerosis and atherosclerosis in these subjects, so susceptible to vascular accidents, indicates a careful therapeutic trial. The following case is a good example of the successful use of thyroxine.

CASE 5. The patient, first seen in 1949 at 52 years of age, had recently moved to California from Chicago where he had had frequent nasal sinus infec-

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*Thyroxine-binding globulin; normal capacity 20 mcg. of thyroxine per 100 cc. of serum.

TABLE 3.—*Clinical and Laboratory Data, Case 5, Category IV (Men): Overweight, Hypertension, Hypercholesterolemia*

	Dates		
	9-24-56	11-15-56	thru 7-12-61
Blood pressure (mm. of mercury)	150/100	146/84	128/80
Weight (pounds)	168	155	160
PBI (mcg. per 100 cc.)	3.9	9.0	5.7
Cholesterol (mg. per 100 cc.)	450	229	233
Thyroid medication	None	Synthroid® 0.3 mg.	
Number of determinations	2	. . . 13 . . .	

tions. He weighed 164 pounds. The blood pressure was 160/100 mm. of mercury. No distinctly abnormal physical findings were noted. In 1956 the patient had recently begun to suffer from recurrent obstructive parotitis (which lasted about four years). The blood pressure at that time was 160/100 mm. of mercury. Two years later, when the patient was 58 years of age, serum PBI and cholesterol determinations were done with the results shown in Table 3.

Comment: It seems probable that the administration of well tolerated doses of sodium levo-thyroxine to this patient was beneficial. Raising the PBI from 3.9 mcg. per 100 cc. to a well sustained value of about 7.0 mcg. has been accompanied by a reduction of serum cholesterol to about 230 mg. per 100 cc., with normal blood pressure, pulse rate (68) and electrocardiogram. It is important to realize, as this case indicates, that the correction of subclinical hypothyroidism results in a reduction of blood pressure as well as a lowering of serum cholesterol.

Category V: Anemia

It is well recognized that anemia is a common but not universal characteristic of hypothyroidism. When the hemoglobin is low, and especially if administration of iron, folic acid and B_{12} does not bring about improvement, consideration should be given to a PBI test. For example: In one case the patient had hemoglobin of 11.5 gm. per 100 cc., PBI of 2.0 mcg. per 100 cc. and serum cholesterol of 385 mg. per 100 cc. After six months of treatment with sodium levo-thyroxine (Synthroid) the hemoglobin was 13 gm.; a year later it was 14 gm., and it remained at that level for the ensuing four years.

In another case the hemoglobin seemed to rise as the PBI rose with faithful adherence to thyroid medication, and to fall when it was neglected. For example, with a PBI of 6.1 mcg. per 100 cc. the hemoglobin was 14 gm. per 100 cc.; and when PBI was 4.1 mcg. the hemoglobin content was 11.2 gm.

Category VI: Goiter and Cancer of the Thyroid

These two conditions may not be characterized by hypothyroxinemia, but they are examples of a relative imbalance of the pituitary-thyroid axis, giving preponderance to thyrotrophic hormone, which has resulted in thyroid gland disease. This can be corrected in many instances[7] by raising the concentration of thyroxine in the whole body, which causes the goiter to shrink. Cancer of the thyroid, if of the hormone-dependent type, is prevented from growing and spreading[1] by continuous high level thyroid hormone medication.

Case 6. A 54-year-old white man noticed a goiter for the first time on the morning of the day he sought medical advice. There had been no acute pain or sensation of pressure and it must be assumed that the mass had been present for some time but had escaped notice. It was on the right side and was 4 cm. in diameter.

The serum PBI was 5.0 mcg. per 100 cc. and the serum cholesterol 269 mg. per 100 cc. The 24-hour uptake of I^{131} was 23 per cent and a scintigram showed diffuse distribution of the isotope. An x-ray study showed displacement of the trachea to the left.

Administration of sodium levo-thyroxine was begun in June 1961. By January 1962 the thyroid gland was not palpable on either side. At this time the patient was taking Synthroid, 0.3 mg. daily, but the PBI and cholesterol were only slightly changed from the levels of six months earlier—6.3 mcg. and 246 mg., respectively.

DISCUSSION

Non-myxedematous, subclinical or occult hypothyroidism was stressed by the present author[6] in 1954. It was well dealt with in a brief paper by Lisser[3] who said that "the patient may not look myxedematous at all, and the dominating or motivating reason for which relief is sought may lead the consultant astray." Lisser listed nine categories of symptoms or disorders that warrant study for possible hypothyroidism: (1) circulatory; (2) gastrointestinal; (3) anemia; (4) arthritis; (5) gynecologic or urologic; (6) ear, nose and throat; (7) skin; (8) psychic or central nervous system; and (9) metabolic phenomena. An excellent and exhaustive analysis of the problem of the diagnosis of hypothyroidism was given by Wayne[10] in the second Lumleian Lecture delivered in London, April 1959. He gave a list of 12 symptoms and nine signs which may be helpful and said that "when the clinician fails to recognize an obvious case of hypothyroidism it is often because the possibility of this condition has not entered his mind." How much more must this be true when the case is not obvious but subclinical or occult. Jefferies, in a recent symposium,[2] gave an interesting discussion of patients with "occult" hypothyroidism and of others having normal serum PBI with "lowered thyroid reserve." The patients designated as having subclinical hypothyroidism in this report nearly always had subnormal serum PBI values, except for occasional patients falling into Category III or Category IV.

Our general conclusion is that there are many patients, not appearing to be myxedematous, complaining of a wide variety of symptoms or having systemic or endocrine disorders, who actually have subclinical hypothyroidism demonstrable by serum PBI measurements, and that they would be restored to health by the life-long administration of thyroid hormone sufficient to maintain normal serum PBI.

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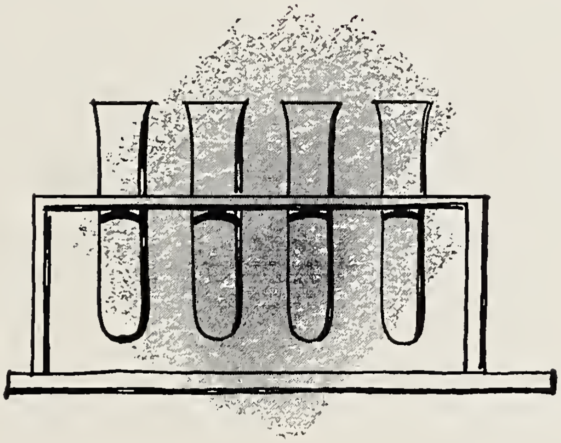

Cerebral Angiography

Its Use in Acute Head Injuries and Undiagnosed Coma

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• One of the major factors in treating a patient with acute alteration of consciousness is to determine if progressive intracranial hemorrhage is present. Similar problems are encountered in cases of cerebrovascular disease where increasingly effective medical and surgical methods of treatment are available. Progressive cerebral thrombosis can be arrested by anticoagulants, intracranial hemorrhage can be controlled and atheromatous occlusion of a major artery can be corrected. Intracranial mass lesions can be detected when the history is not available or is misleading.

Cerebral angiography is a relatively safe diagnostic test that is certainly preferable to delayed or haphazard treatment when an exact diagnosis is uncertain in an unconscious patient.

Since the introduction of cerebral angiography by Egas Moniz in 1927, the recognition and treatment of various intracranial vascular diseases has attracted great interest. Over the years, the techniques and contrast media used have been improved to achieve better studies and less risk for the patient.

Today neurosurgeons employ angiography in the investigation of carotid and vertebral insufficiency, intracranial masses, spontaneous subarachnoid hemorrhage and "cerebrovascular accident" of other kinds. In some medical centers it is an integral part of the routine investigation of symptomatology involving the central nervous system. Proper diagnosis and localization of the lesion has permitted an aggressive approach in treatment. Endarterectomy and by-pass procedures on the carotid or vertebral arteries restore adequate blood supply to the brain. Patients with subarachnoid hemorrhage may be salvaged by obliteration of the aneurysm or angioma and evacuation of the local hematoma. If carotid ligation is indicated, angiography demonstrates the individual variations of circulation. Lesions of cerebral arteriosclerosis may be recognized and anticoagulant therapy begun without delay. In patients with space-occupying masses, the location, size and often the exact nature of the lesion may be determined by alterations of vascular pattern. This important role of cerebral angiography in such conditions, either as an aid in diagnosis or as an evaluation of treatment, is well recognized.

Beyond this, the purpose of this presentation is to suggest that cerebral angiography, if performed in proper facilities and conditions of clinical assessment, can be an essential part of the elucidation of some acute or "emergency" cases of altered consciousness. Of course, there are many causes of unconsciousness. At San Francisco General Hospital, which receives a majority of such problems that occur within the city limits, the causes in order of incidence would be ingestion (alcohol and drugs), head injury, cerebrovascular accident and metabolic disturbance. However, an alcoholic patient may have an acute head injury with intracranial bleeding, a diabetic patient may have an inflammatory process or arterial occlusion in the central nervous system and the cerebral vascular accident may actually obscure the signs of a brain tumor.

A careful physical and neurologic examination will often localize the area of dysfunction of the nervous system, but a detailed history of the patient's behavior before loss of consciousness and the nature of onset is usually necessary to determine cause. This over-all concept of investigation must be kept in mind to avoid omissions or premature conclusions in diagnosis. Unfortunately, the unconscious patient is often brought to an emergency hospital with absolutely no history available. Nonetheless, an accurate diagnosis must be made without delay, for a number of these patients will die unless proper treatment is begun quickly.

The cases of simple alcoholism, drug ingestion, diabetes, hypoglycemic coma, uremia, adrenal collapse, myxedema, electrolyte imbalance and cardiovascular failure must be detected. Other patients will have either acute or subacute alterations of consciousness due primarily to disorders of the nervous system. Much can be done to help patients with these conditions. Simple head injury, meningitis, encephalitis, post-seizure state and most kinds of cerebrovascular disease do not present a problem that can be remedied by surgical procedures. However, conditions such as spontaneous intracranial hemorrhage due either to rupture of an aneurysm or angioma, or to primary cerebral hemorrhage with

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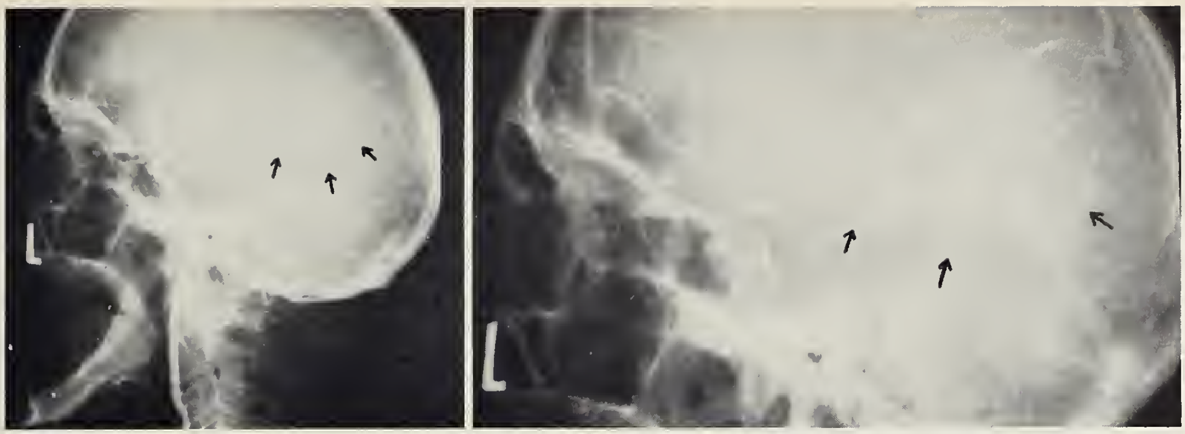

Figure 1.—(Case 1) Parietal occipital glioblastoma multiforme. *Left,* narrowing of cervical portion of the left internal carotid artery. *Right,* staining of parietal tumor shown in venous phase.

intracerebral hematoma, subdural or epidural hematoma, partial occlusion of major arteries supplying the brain, brain tumor or abscess are properly considered surgical problems and many represent real neurosurgical emergencies.

In years past, neurosurgical attention to the semicomatose or comatose patient with either a severe head injury or coma of undetermined cause would consist of multiple exploratory burr holes, and, if surface hematoma were not observed, needling of the brain and ventriculography to locate a space-occupying lesion. Exploratory burr holes involve multiple skin incisions and permanent skull defects and as a diagnostic procedure are frequently unrewarding. Random brain needling or ventriculography may precipitate death in a comatose patient. On the other hand, angiography may provide a precise anatomic and etiologic diagnosis and permit an accurate and definitive surgical operation to evacuate intracranial mass lesions, to relieve increased intracranial pressure or to alter vascular occlusion. Recent developments in surgical or enzymatic removal of cerebral arterial thrombosis require angiographic diagnosis and evaluation.

Head injuries will undoubtedy continue to present a major problem for emergency hospitals. In only a small portion, perhaps 5 per cent, of all cases of cerebral trauma is surgical intervention required, yet there are a large number in which question arises as to whether or not operation is indicated. Thus, any study which might more clearly define the situation and eliminate unnecessary operation would be welcome.

The patho-physiology of cerebral injury often hinders proper clinical evaluation of central nervous system function. The primary need is to determine whether or not intracranial hemorrhage is occurring and, if it is, whether bleeding is from severance of the middle meningeal artery, from laceration of brain substance or from rupture of cortical veins. Subpial hemorrhage and devitalized tissues, frequently present in cerebral contusion, produce cerebral edema which may simulate a mass lesion.

There are probably many neurosurgeons who, when considering the possibility of bleeding in a critical head injury, still obey the dictum, "when in doubt, put in burr holes." The number of cases in which they find no lesions by this means is reported as evidence of careful attention to patients with head injuries. Such an approach does not provide for the abnormally located hematoma over the frontal pole, under the temporal lobe, between the cerebral hemispheres, in the posterior fossa or within the substance of the brain. Nor does it consider the additional mortality caused from interference with airway by surgical drapes, vomiting, pharyngeal secretions, neck flexion and body manipulation in drilling multiple burr holes under local anesthesia in a critically injured patient. In the past two years cerebral angiography has been used on the neurosurgical service at San Francisco General Hospital, and in that time "screening" burr holes rarely have been needed. Angiography is also used in every case of head injury in which there is evidence of deterioration or the patient does not improve as rapidly as could be expected during conservative treatment.

Reports of cases illustrating various uses of angiography follow.

PRESENTATION OF CASES

CASE 1. The patient was a 64-year-old white man admitted with a complaint of four transient episodes of syncope, each preceded by a feeling of generalized weakness, vertigo and lightheadedness. He had had "a heart attack" several years earlier, with a similar episode of syncope. Upon examination, mild speech difficulty, right homonymous hemianopsia and incoordination of right hand movements were noted.

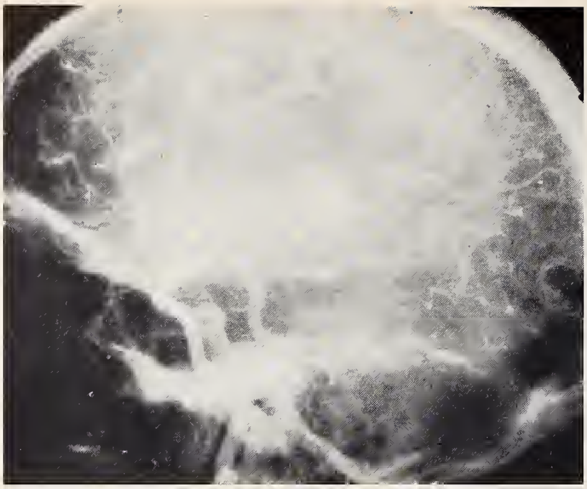

Figure 2.—(Case 2) Arteriovenous malformation, right middle cerebral artery.

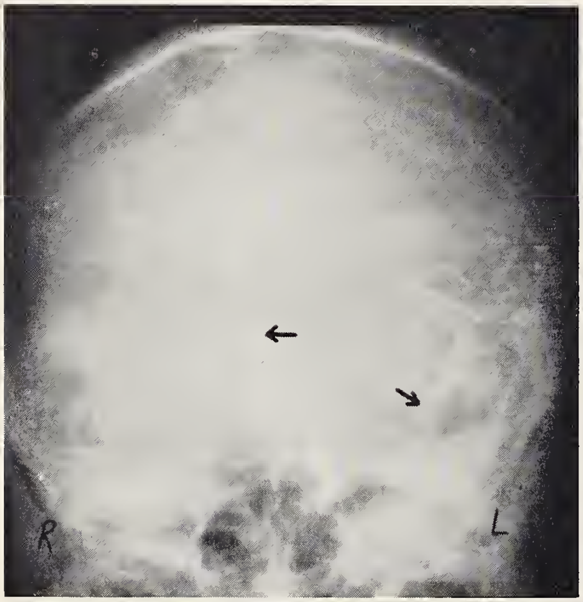

Figure 3.—(Case 3) Intracerebral hematoma. Arrows point to slight shift of anterior cerebral artery and depression of left middle cerebral artery.

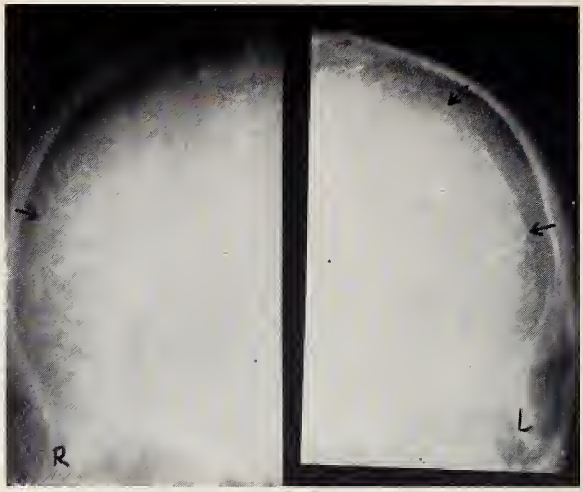

Figure 4.—(Case 4) Bilateral subdural hematoma. Arrows point to depressed surface of cerebral hemisphere.

A diagnosis of basilar insufficiency was made and anticoagulant therapy recommended. Angiography revealed a narrowing of the cervical portion of the left internal carotid artery, and, more important, the telltale staining of a parietal tumor was seen in the venous phase (Figure 1). Histologic diagnosis was glioblastoma multiforme.

Case 2. A 42-year-old white woman was admitted in emergency with complaint of intermittent severe headache for 24 hours. She reported tingling of the left finger tips progressing to numbness of the entire left side of the body. Upon examination, sensory disturbance, ataxia, slurred speech and three months pregnancy were noted. A tentative diagnosis of drug ingestion (for attempted abortion) was made. She had persistent symptoms during a two weeks' period of observation. In studies of the spinal fluid, red cells and xanthochromia were noted. Angiography revealed an arteriovenous malformation of the right middle cerebral artery (Figure 2). Surgical excision of the lesion was followed by compete recovery and uneventful gestation.

Case 3. A 28-year-old Negro man had sudden onset of headache while watching television. Right-sided weakness, aphasia and stupor developed rapidly. Results of examination suggested a left frontal lobe lesion. Angiography showed a slight shift of the anterior cerebral artery and depression of the left middle cerebral artery (Figure 3). Operative evacuation of a 40 cc. intracerebral hematoma deep in the posterior frontal lobe was followed by satisfactory recovery.

Case 4. A 72-year-old white man, a chronic alcoholic with a history of repeated head injuries, seizures and delirium tremens, was admitted to hospital for the fifteenth time, having been brought from the city jail in a lethargic state. A diagnosis of chronic brain syndrome was entertained, but progressive deterioration of consciousness and the presence of xanthochromic spinal fluid with increased pressure led to angiography, revealing bilateral subdural hematoma (Figure 4). Evacuation through burr holes and repeated aspiration of blood from the subdural space brought about progressive improvement.

Case 5. A 51-year-old white man was admitted in semicoma and with continuous generalized seizures. X-ray films of the skull revealed an old left parietal craniotomy. Results of examination suggested a lesion in the right cerebral hemisphere. An angio-

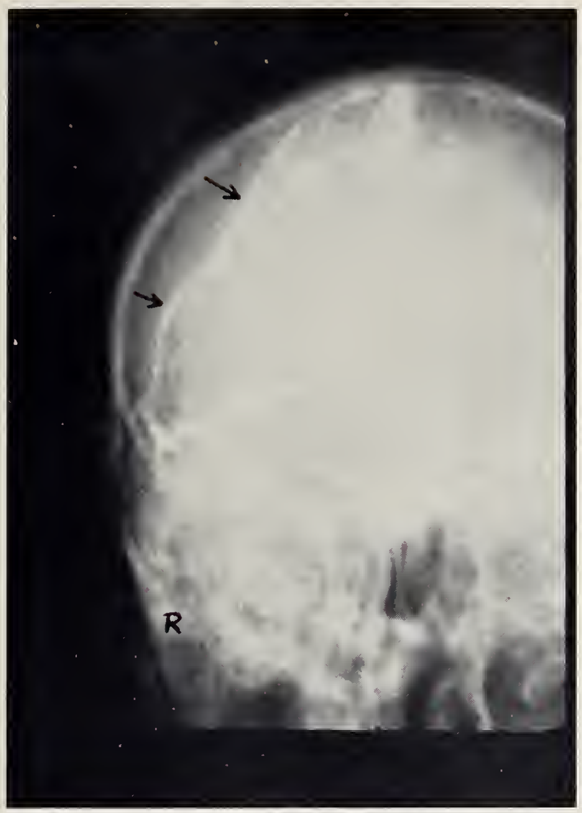

Figure 5.—(Case 5) Arrows point to concave outline of chronic unilateral subdural hematoma.

gram depicted the concave outline of a chronic subdural hematoma. It was evacuated but the patient died shortly afterward (Figure 5).

Case 6. The patient was a 31-year-old white man who had fallen on the street, incurring a scalp laceration and linear skull fracture. He became unconscious in a district emergency room and on admission did not have any lateralizing signs. Angiography demonstrated horizontal displacement of vessels by an extradural hematoma, which was promptly evacuated (Figure 6).

Case 7. A 52-year-old white man was admitted, semicomatose. There was response to painful stimulation but with the left extremities more active than the right. X-ray films of the skull showed a fracture in the right temporo-parietal area. Angiography revealed a mass in the area of the left temporal lobe (Figure 7). A subdural hematoma and small amount of contused brain were removed from the temporal fossa. The patient recovered rapidly.

Case 8. A 41-year-old white man had fallen from bed in an alcoholic stupor, striking his left hip and the right side of his head. Upon examination, confusion, left hemiplegia and hyperreflexia were noted. Angiography revealed thrombosis of the right middle cerebral artery (Figure 8). Under regular carbon dioxide inhalations and prolonged physiotherapy, the patient had partial recovery of function in the left arm and leg.

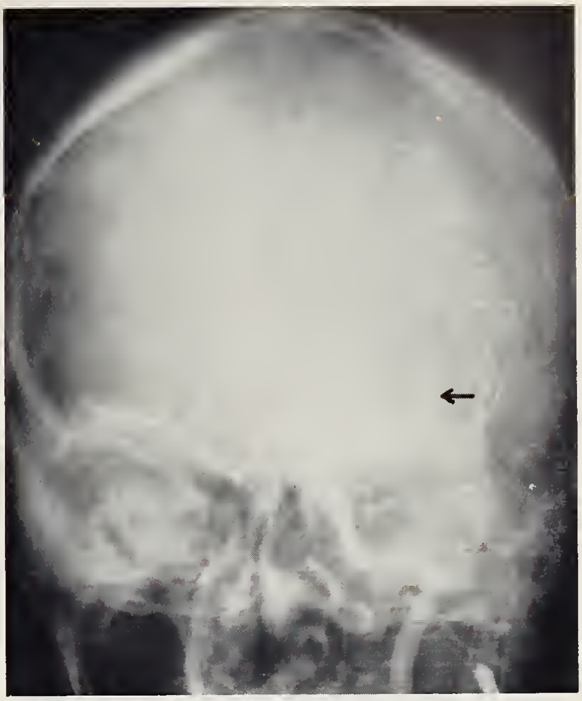

Figure 6.—(Case 6) Horizontal displacement of vessels caused by extradural hematoma.

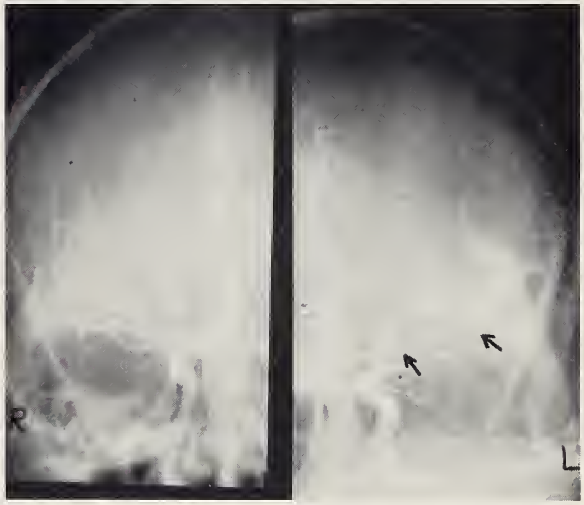

Figure 7.—(Case 7) Left frame shows fracture in right temporo-parietal area. Right frame shows elevation of left middle cerebral artery.

DISCUSSION

These cases represent only a few of the studies that resulted in properly directed surgical measures. On the other hand, in many diagnostically difficult cases of head injury and altered consciousness from

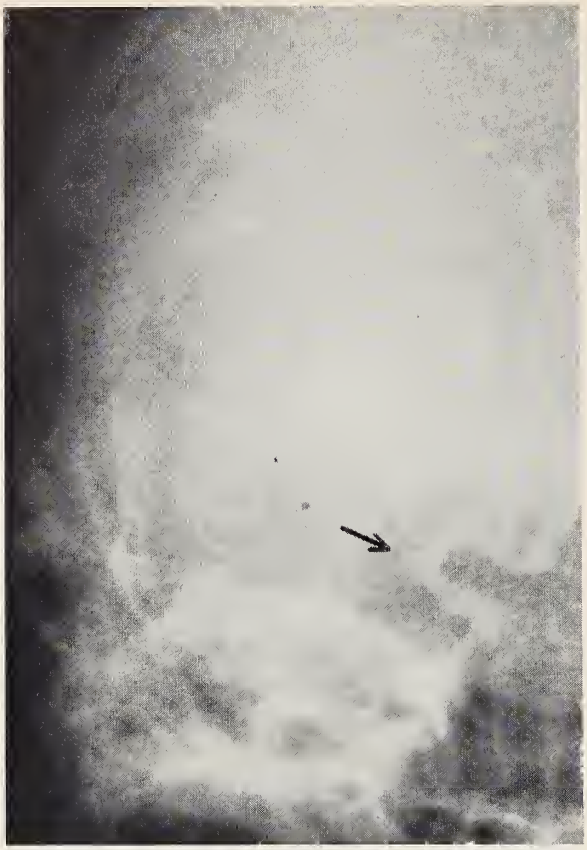

Figure 8.—(Case 8) Thrombotic occlusion of right middle cerebral artery.

other causes, normal angiograms enabled the attending physician to decide against surgical operation and to initiate such treatment as hypothermia, cerebral dehydration, correction of fluid and electrolyte disturbance, anticoagulant or anti-convulsant medication with reasonable certainty that a surgical intracranial lesion had been excluded.

The acceptable techniques of cerebral angiography are well known. Emergency measures to establish an adequate respiratory exchange, to arrest external hemorrhage, to treat shock and to prevent further injury should be available at any medical facility, but the hospital that accepts for definitive treatment such patients with acute alteration of consciousness should have angiography available at any time of day or night. The procedure can be performed quickly and almost always under local anesthesia, with premedication if indicated. At San Francisco General Hospital and University of California Medical Center, the use of bi-plane radiographic and rapid changer film units makes it possible to obtain both antero-posterior and lateral views with injection of only one 10 cc. injection of contrast media on each side. Six serial x-ray films, spaced 1.5 seconds apart, depict the arterial, capillary and venous phases in each projection. Complications of angiography are usually related to faulty technique of arterial cannulation or improper injection. The use of 50 per cent Hypaque® (sodium diatrazoate) solution in recent years has made a general toxic or allergic reaction extremely rare. Wende and Schulze[1] reported one death and two permanent sequelae in a series of 2,864 angiograms. They reviewed 37,271 cases reported in the world literature from 1948 to 1959, noting a mortality of 0.16 per cent, permanent sequelae of 0.1 per cent and transient sequelae of 1.3 per cent. In the patients herein described, certainly the possible benefits of angiography far exceeded the risk.

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Chromosomes of Leukocytes

The Problem of Human Individuality

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• The technique of chromosome analysis of human leukocytes after short periods of culture in vitro gives promise in several areas of basic biology and medicine.

Information is being accumulated on the possibility that stem-line cells in the circulation can assume hemopoietic function. A large number of congenital diseases are being described in terms of chromosomal aberrations. Human blood cells are found to be useful in the study of radiation, air pollution and drug injuries. It is possible that this method may also be helpful in evaluating various cancer therapeutic measures.

Basic information is needed to assemble tables of constants regarding variation in the range of modal chromosome numbers (aneuploidy), as well as the occurrence of polyploidy and injury in presumably healthy persons.

THE UNIQUENESS of the individual remains one of the central problems of biology. Extensive current interest in the almost limitless possibilities for permutations and combinations affecting the configuration of the desoxyribonucleic acid (DNA) molecule provides a solid basis for explaining the concept that no two organisms, even identical twins, can be exactly alike. At the practical level, the phenomenon of individuality has been a major preoccupation for anthropologists, psychologists and students of dermatoglyphics, and inevitably it must be considered by clinicians in the course of establishing therapeutic measures and attempting to assess prognosis. In exploiting chemical studies of the blood as a means of evaluating metabolic variables that are a reflection of the state of health of the individual, we have leaned heavily on the words of Mephistopheles, in Goethe's "Faust"—"Blut ist ein ganz besonderer Saft!" (blood is a very peculiar fluid). Students of cytology have long sought a procedure in which a cell sample might readily serve as the counterpart of the blood specimen in efforts to quantitate individual differences.

Draper and his associates[8,9] made early inroads in adapting the tissue culture method for this purpose. Unfortunately, the description of morphologic variations of leukocytes *in vitro* proved to be exceedingly difficult to score and the undertaking was not extended by other investigators. However, two technical advances that have recently brought a fresh impetus for the study of human individuality are proving to be of practical clinical interest beyond the fundamental knowledge which they can provide in biology generally. These consist of the method for the analysis of chromosomes of cells grown *in vitro*, and the procedure for short-term leukocytic cultures in which numerous mitotic figures can be made available for study.

Many attempts had been made to adapt tissues from surgical specimens for the evaluation of individual differences. With the use of antibiotics to eliminate the problem of contamination, some hope was offered in the use of large masses of readily available tonsillar tissue but this proved to be complicated by the almost universal presence of adenoviruses. In contrast to biopsy material which may not warrant the pain involved, venipuncture to obtain a 20 ml. sample for chromosome analysis offers no serious barrier even in the study of children.

METHODS

On the basis of the classic papers by Hungerford and co-workers,[11] Nowell,[17] and Moorhead and co-workers,[15] many modifications have been introduced with the common goal of providing large numbers of divisional figures without undue risk of inducing abnormalities. Since it is well known that there is a tendency toward hyperploidy in the long-term growth of adult tissues, culture must be harvested at the earliest possible suitable moment. Ohnuki and co-workers[18,19] have reported their efforts to achieve uniformity of results in our laboratory. Recently, Awa (unpublished) summarized his procedure as follows:

Heparinized peripheral blood is collected in conical tubes and immediately after bleeding is allowed to stand for about 60 minutes at room temperature.

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Aided by Grant No. T-249 from the American Cancer Society.

Presented as part of the Basic Science Session at the 91st Annual Meeting of the California Medical Association, Los Angeles, April 15-18, 1962.

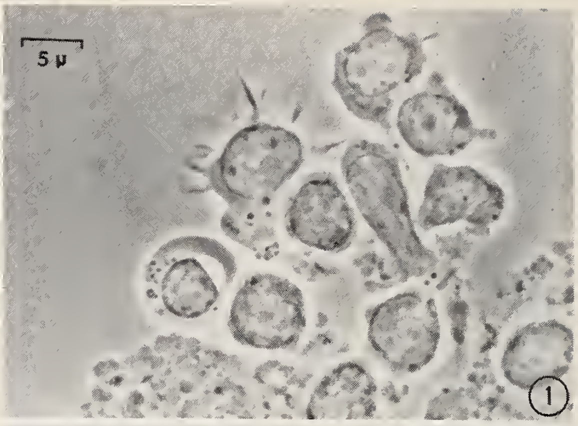
Erythrocytes become agglutinated and settle to the bottom of the tubes. From the supernatant a number of leukocytes can be obtained.

An appropriate number of white blood cells, suspended in supernatant, are implanted into T-30 flasks, and 5 ml. of culture fluid (Eagle's medium with 10 per cent horse serum) is introduced into each container. Usually an inoculum with a concentration of approximately 1 x 10^5 cells per ml. gives satisfactory results. To this mixture 0.025 to 0.050 ml. of phytohemagglutinin (PHA-M, Difco) is added. The cultures are then incubated at 37° C. The technique employed in this laboratory for obtaining well-spread chromosomes was recently published.[18]

So rapidly have advances taken place in leukocyte chromosome analysis that workers in this area are being aided by a novel communications technique: the distribution of three informal newsletters.[13,20,24] The goal of these summaries is to keep investigators abreast of recent work, much of which is, as yet, not formally published. These cover normal and abnormal chromosomes, with special reference to congenital and to malignant diseases, and to radiation injuries, as well as to new technical advances. Within the limits of the present paper only the current effort of our own group will be briefly summarized, with the hope of illustrating a few directions for future work which appear to offer promise.

1. *Possible recreation of hemopoietic loci*

Within a few hours of incubation, well-individualized lymphocytes and monocytes are seen to assume pronounced membrane activity associated with feeding and locomotion (Figure 1). By the third day the aggregation of cells around a center made up of large undifferentiated forms or debris progresses to form colonies which may consist of scores to several hundred cells (Figure 2). The typical "hand mirror" forms of lymphocytes, as seen in phase contrast time-lapse cine recordings, appear to change polarity and to imbed their caudal gelated appendages between marginal cells and then continue to show active undulatory movements of their anterior membranes. Detailed analysis directed at identifying cell types and their "ecological" behavior, in relation to the possibility that hemopoietic loci can be reconstituted from adult human peripheral blood elements, is being conducted by Dr. Y. Ohnuki. It is notable that Thiéry,[26] in a study of plasma cells in the lymph nodes of rats, found these elements aggregated around large cells described as histiomonocytes, which might have a proliferative or cooperative function as pointed out by Amano.[1]



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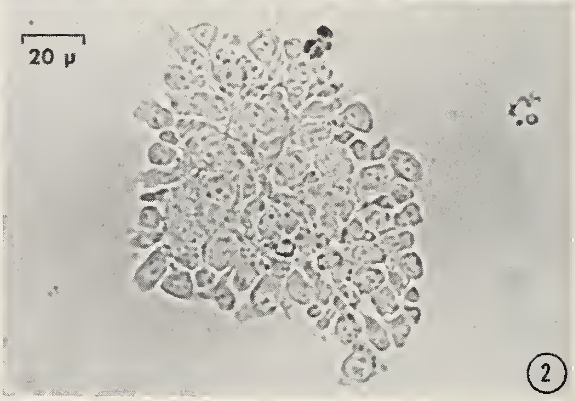

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Figure 1.—Dark phase contrast microscopy showing an aggregation of leukocytes, with an extensive undulating membrane in one of them. The specimen is a one-day culture. Figure 2.—Bright field microscopy showing colonial organization typical of human leukocytes *in vitro*, suggestive of reconstituted "hemopoietic loci." The specimen is a five-day culture.

In our preparations mitotic activity appears to be especially common in the submarginal zone, but confirmation that lymphocytes can assume active proliferative capacity awaits further study. Membrane activity at the periphery, as seen in cine sequences, may function in directing the flow of nutrients toward the center of the cellular aggregates. In the course of discussions on "blood cell tissue culture,[4] the tenor of opinion was that not only were stem cells present in peripheral blood, but that they could be awakened to proliferative activity under experimental conditions involving a mucopolysaccharide in phytohemagglutinins acting either as a mitotic stimulant or in the neutralization of a plasma factor which normally inhibits mitosis.

An obvious extension of these views leads to the speculation that peripheral blood, after suitable cultivation *in vitro*, might be used to restore hemopoiesis to damaged bone marrow. Thus, blood from a subject having received a sublethal dose of irradiation might be incited to hemopoietic activity *in vitro* and within three to six days returned to its host as an autoplastic graft.

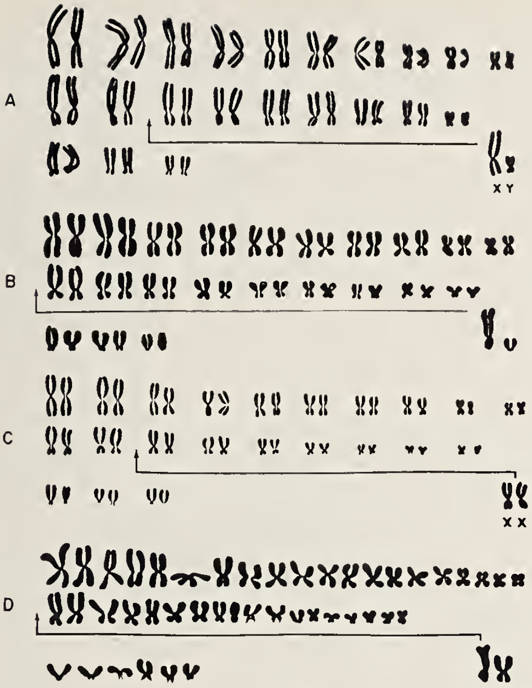


Figure 3.—Idiograms of human chromosomes. Normal male (A) and normal female (C) compared with those of male and female sibling children having a congenital syndrome—congenital cataracts, kyphosis, super-extension of the cervical region and elevated patellae; male (B) and female (D).

2. *Chromosomal aberrations in congenital diseases*

The list of clinical entities characterized by variations in stemline numbers, in "marker" chromosomes and other abnormalities is being explored rapidly in many parts of the world. Dr. Johanna Blumel, a cytogeneticist attached to the Division of Orthopedic Surgery at the University of Texas Medical School in Galveston, was attracted to the study of a male and female sibling one year apart in age who were confined in a cerebral palsy home. They had several common anomalies including congenital cataracts, kyphosis, super-extension of the cervical region and elevated patellae. No other evidence of this syndrome was found in the family.[5] Figure 3 represents the idiograms of the two affected children in comparison with those of normal persons. It will be seen that the X chromosome of the deformed boy (B) and one of the X's of his sister (D) were considerably longer than those of corresponding structures in normal males (A) and females (C). A detailed analysis of these "markers" is in preparation.

Dobson and Ohnuki[7] described the chromosomal abnormalities of a child with a convulsive disorder. While the modal value in this child was 46, there were three "marker" chromosomes characterized by secondary constrictions.

Such studies represent the descriptive phase in the history of this subject. It is to be hoped that as we come to know more about DNA synthesis, about viral disorders which may be associated with pregnancy and about inborn metabolic errors, additional light may be cast on the mechanism of these defects of the mitotic apparatus.

3. *Radiobiology and chromosomes*

Rapid advances in this area warranted the organization of a special conference in 1961 under the sponsorship of the New York Academy of Sciences.[25] In one of the reports, cultures of human leukocytes treated on the fourth day with 400r from a cobalt-60 source were found to have chromosomal injuries in 56.6 per cent of the cells. Polyploidy increased from 0.1 per cent in the controls to 6.3 per cent in corresponding treated cells.[18]

Work in progress is designed to compare gamma with other radiation energies, with the ultimate goal of using these data as references for the analysis of the effect of exposing human blood cultures in rockets to radiation as it occurs in outer space. Unfortunately cultures of blood from the rhesus monkey for the comparison of radiation injury with values obtained from human material have not yet proven satisfactory.[19]

4. *Air pollution and chromosomal injuries*

On the basis of experience accumulating in the evaluation of mitotic injury to various cell species resulting from tobacco tars,[2,14,16] experiments were conducted in which conjunctival cells (Chang line) were exposed to automobile engine exhaust gas for periods ranging from 15 seconds to 24 hours. The cells showed a decided tendency to chromosomal clumping (Figure 4) as compared with well-spread elements in corresponding control cultures (Figure 5). While cytological research generally can be entrusted only to specialists, the scoring of clumping can safely be done by competent technicians.[22] It is to be hoped that more end points of this sort can be found for other experimental studies.

Work in progress is designed to contrast the action of various noxious gases found in the atmosphere, as well as from automobile and industrial sources, in producing injury to the heteroploid lung cell line (Nakanishi) and to one of the diploid Hayflick and Moorhead cell strains,[10] and to human peripheral blood elements. Such work is also suggestive of opportunities for the evaluation of drug toxicity, possibly including the potentiality of certain compounds to induce blood cell abnormality.

5. *Evaluation of cancer chemotherapy*

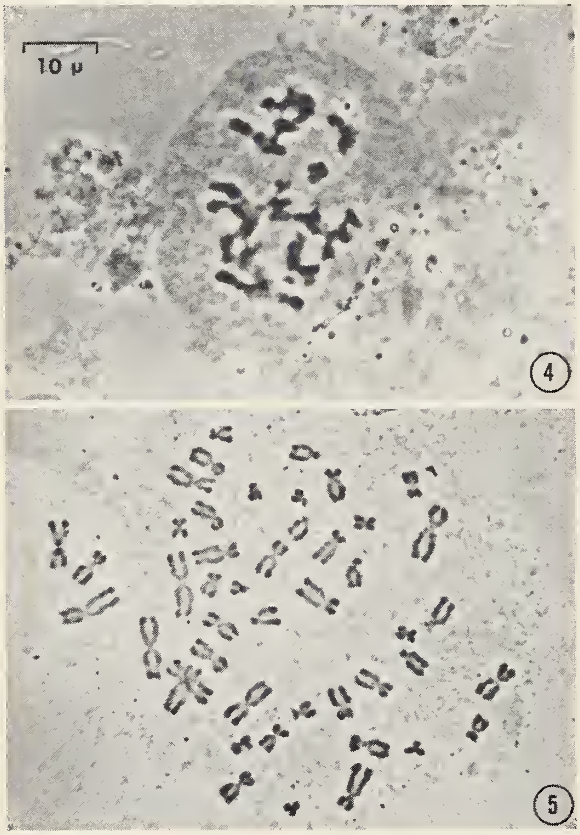
In the course of efforts to evaluate the effect of 1-aminocyclopentanecarboxylic acid (NSC-1026) in

TABLE 1.—*Peripheral Leukocyte Chromosome Study from Female Patients*

Case No.		Sample	Chromosome Number Distribution 45	46	47	48	92	Total	Chromosome Breaks	Per Cent
1	Hyperthyroid disease	Before	....	30	1	....	....	31	1/31	3.2
		3 mc. I^{131}; 24 hours	....	23	4	1	....	28	5/29	17.2
2*	Carcinoma of thyroid	Before	....	41	1	....	....	42	4/44	9.1
		100 mc. I^{131}; 24 hours.	....	19	....	1	....	20	1/20	5.0
3	Hyperthyroid disease	Before	2	47	1	....	....	50	1/50	2.0
		8 mc. I^{131}; 24 hours	1	37	2	....	....	40	5/42†	11.9
4	Hyperthyroid disease	Before	....	21	1	....	....	22	0/22	0
		5 mc. I^{131}; 24 hours	2	33	....	....	2	37	1/37	2.9
5	Hodgkins disease	Before	2	27	1	....	....	30	3/31	9.7
		1000r Co^{60}; 1 week	2	34	3	1	....	40	3/41	7.3
		2750r Co^{60}; 31 days	1	36	3	....	4	44	2/41	4.9

*This patient had been treated with 100 mc. I^{131} three months previously and had had thyroidectomy; 10 mc. of I^{131} at time of chromosome study.

†Two secondary constrictions were included.



Figures 4 and 5.—Human leukocytes treated with the chromosome-spreading technique after six days *in vitro* and stained with orcein, illustrating clumping (Figure 4) in comparison with a spread pattern (Figure 5).

TABLE 2.—*Distribution of Chromosomes in Cells of Healthy, Persons*

Case No.	Sex	Age (Yr.)	Number of Chromosome per Cell / Number of Cells Containing That Number: 33...45		46	47	48	49	50...	92±1	E*	Total Cells
1	M	11	..	..	151	..	..	..	..	..	..	151
2	M	18	..	..	26	3	1	..	..	..	..	30
3	M	27	..	..	119	..	..	..	..	..	1	120
4	M	27	..	1	59	..	..	..	..	..	..	60
5	M	34	..	..	147	1	1	..	..	..	1	150
6	M	34	..	..	30	..	..	..	..	..	..	30
7	M	39	..	..	60	..	..	..	..	..	..	60
8	M	55	..	..	205	1	..	..	1	1	2	210
9	F	11	..	..	72	..	..	..	..	..	..	72
10	F	23	1		168	1	..	..	..	..	..	170
11	F	25	..	..	56	..	..	..	..	3	1	60
12	F	33	..	..	20	..	..	..	..	..	..	20
			1	1	1113 98.23%	6	2	0	1	4	5	1133

*E: Endoreduplication.

the management of multiple myeloma,[21] the karyotypes of cells from the buffy coat were studied before and after therapy. While the data were limited in extent, they suggest an important challenge for cancer chemotherapy.

Chromosomal aberration after diagnostic x-irradiation has been reported by Stewart and Sanderson[23] and by Tough and co-workers.[27] Baikie and his associates[3] observed that three patients with ankylosing spondylitis showed abnormal chromosome pattern in leukocytes which were cultured following x-ray therapy to the spine. A preliminary communication on the damaging effect of radioiodine at doses of 6 to 150 millicuries in six men and two women has been presented by Boyd and co-workers.[6]

While it would appear that documentation of chomosomal injury was primarily useful in the study of radiation health hazards, quite a different use may be made of such findings. We are at present engaged in attempting to determine whether correlations can be found between tumor regression and chemotherapy, radiotherapy and immunotherapy as reflected by changes in the chromosomal pattern of the patient's leukocytes. Desiderata in setting up this program include (1) the study of persons with malignant disease diagnosed by histopathological criteria and no previous therapy, (2) at least two examinations of the blood before therapy is instituted, and (3) follow-up for a suitable period during the course of therapy, together with regular precise clinical appraisals. Table 1 shows preliminary observations by H. Oishi. Obviously, since the sample size, type and dosage of the therapeutic agent as well as the time interval following treatment must be documented for a variety of pathological entities as well as for subjects treated for non-malignant processes. gathering the large body of data needed will require a great amount of exacting work. While the data presented are statistically inadequate and therefore do not deserve extensive discussion. they indicate the type of information which may ultimately prove useful.

6. *Constants for human chromosomal variation*

In the course of radiobiological and other investigations, collected data on control material are being added to growing knowledge accumulated in other laboratories for describing the range of variation in aneuploidy, polyploidy and the occurrence of abnormal chromosomes in presumably healthy persons in relation to sex and age. Table 2 presents recent data by Y. Ohnuki and A. Awa. A large body of data has been contributed to this literature by Jacobs and co-workers.[12] Two difficulties are inherently present in the documentation of chromosome constants: (a) uniformity of technical procedures, and (b) the enormous labor of preparing the reliable idiograms needed for accurate results. Nonetheless, such information is urgently needed.

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Decrease in Serum Cholesterol with Surgical Stress

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• Serum cholesterol levels decreased with the stress of operation, before the procedure or after it, or before and after. This decrease was 17.6 per cent in a group of 28 elective surgery patients and 20.4 per cent in nine ruptured intervertebral disc patients who had an operation. A presurgical drop was noted and considered to be related to psychological stress.

Several reports have appeared correlating stress with increases in serum cholesterol levels in man* In them the investigators speculated on the relationship of stress and cholesterol increases to the etiology of atherosclerosis. The stress studied was mental tension in students during examinations or in men during periods of increased occupational activity typical of some seasonal businesses. In contrast, decreases in serum cholesterol have been correlated to the stress of surgical operation[7,8] and myocardial infarcts.[1,6] In these studies adequate control levels before the stress were lacking, for it was not feasible to obtain pre-infarct values and the surgical study used reference values from specimens taken just hours before operation.

The present study was undertaken to evaluate cholesterol changes with surgical operations under more adequate control conditions.

METHODS

Previous data noted in a report on myocardial infarcts by Kellogg[6] suggested a further inquiry into serum cholesterol changes in selected stress situations. Two series of male patients were studied. One was made up of 28 patients who were admitted to hospital for elective surgical operation several days before the day set for the procedure. Two or more specimens of serum were obtained before operation and one specimen on the morning of operation. Cholesterol determinations then were done on two or more specimens up to eight days after operation.

The other group was composed of 21 patients admitted with a diagnosis of ruptured intervertebral disc. This group was of particular interest, for the patients were put in hospital for bed rest, observation and possible surgical operation, thus providing for control levels over a period of two to three weeks. These patients also presented the opportunity to examine the effect of mental stress before operation, since the decision regarding surgical intervention was not made until the results of conservative treatment were evaluated.

The second group naturally divided into those who did not have operation (12 patients) and those who did (nine patients). The total period of observation averaged about 20 days for those who were not operated upon and about 30 days for those who were. Six to 17 specimens of blood taken before breakfast were collected from each patient. Cholesterol analysis was done by the method of Kanter and co-workers.[5]

RESULTS

Twenty-seven of the 28 patients with elective operations showed a decrease in serum cholesterol levels—all but one having some decrease before and all but six some further decrease after operation. Twenty-three of them had maximum decrease of more than 10 per cent of initial levels. The average decrease was 17.6 per cent with a range of 5 to 40 per cent. Changes from initial levels to the morning of operation, as well as changes from the immediate preoperative levels to the postoperative minimum, were also analyzed. During the preoperative period the serum cholesterol level of 26 patients decreased an average of 12.4 per cent. Sixteen of these had a decrease of over 10 per cent from control levels. Twenty-one patients had additional decreases after operation, the average decrease being 9.2 per cent.

Chart 1, line A, shows the curve of average values with the day of operation as zero time. Since all samples were not taken on the exact day in reference to the day of operation, some grouping or rounding of the time scale was employed. That is, data from samples collected on the sixth, seventh or eighth day were grouped for average calculations and graphed as the seventh day point. The −1, 0 and +1 day values were taken on the day before operation, on morning of operation and the morning following operation. This group of 27 patients consisted of five having hemorrhoidectomy, 14 having herniorrhaphy, two removal of varicose veins, two abdominal perineal resections, one removal of thy-

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Submitted March 21, 1962.

*References 2, 3, 4, 10, 11.

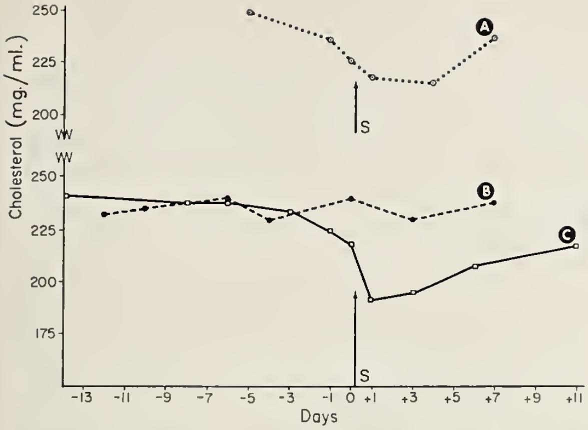

Chart 1.—Serum cholesterol changes with surgical stress. Line A, average total cholesterol values of 28 patients admitted for elective operation. Line B, average values of 12 patients with intervertebral disc disease who did not have operation. Line C, average serum cholesterol on nine patients with disc disease who were operated upon. Surgical operation (S) was performed at day 0.

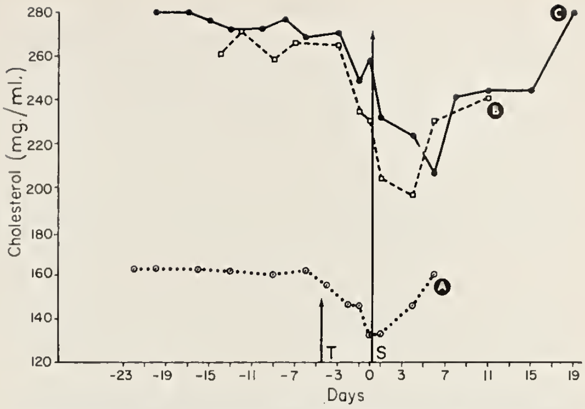

Chart 2.—Changes in serum cholesterol in three persons who had intervertebral disc operations. Day 0 is the day of surgical operation (S). The time (T) that patients were told of the decision to operate was four days before the day of operation.

roid nodule, one removal of pilonidal cyst, one pyloroplasty and one thyroidectomy. Careful examination of the cholesterol changes showed no correlation with the type of anesthesia or operation.

The 12 patients admitted for observation of possible ruptured intervertebral disc who did not have operation showed some variation in average cholesterol levels (Chart 1, line B). The maximum change in these averages was 5 per cent, although individual variation was greater than this. There was no evidence of any change in these averages that could be related to hospital diet, major periods of bed rest or the stress of indecision about surgical intervention.

The nine patients who did have operation (Chart 1, line C) had an average presurgical decrease of 9 per cent in serum cholesterol levels. There was an additional decrease of 12.8 per cent immediately after operation, which was followed by a gradual increase to a level that was still below initial levels at 11 days after operation. In some patients the initial decreases were as early as four days before operation, at the time they were told of the forthcoming procedure. The data in Chart 2, line A, concern a patient with a very stable cholesterol level during the control period and a clear decrease at the time he was told an operation was to be performed. Lines B and C of the chart show the cholesterol changes in two other patients with decreases before operation, then a further decrease after operation.

DISCUSSION

Serum cholesterol levels decreased with the stress of surgical operation, either before or after operation or before and after. The two groups of patients who had operations showed average total decreases in cholesterol of 17.6 per cent and 20.4 per cent. The initial group of patients was observed for periods up to one week before operation. This short control period might not reveal the effect of such factors as bed rest and hospital diet. The second group of patients was observed for two to three weeks before they were operated upon. This period of time provided for better control levels. However, the longer observation time did not reveal significant changes in cholesterol levels with hospitalization and its attendant changes in the patients' routine.

The stress of operation was both psychological and physiological. The psychological stress of anxiety in anticipation of operation was accompanied by an initial decrease in cholesterol. This varied with the individual, some responding with a decrease immediately upon being told of the decision to operate; in others this change occurred 24 hours before operation. No change in diet or preoperative medication had been initiated up to this time. The physiological stress of the operation was followed by an additional cholesterol decrease—a decrease that occurred under stress conditions relating to the integrity or survival of the body. In contrast the increases in cholesterol previously reported occurred with stresses more related to social status and recognition of success in society.

Peterson and co-workers[9] presented cholesterol changes in response to stress, wherein the students observed were grouped according to the stability of their serum cholesterol levels. This study included five "labile" students who showed changes related to mental stress. A consistent serum cholesterol decrease was correlated with a previous period of apprehension. An increase in cholesterol occurred before an anticipated exposure to cold. It is not clear how these observations may relate to the decreases in cholesterol that occur before surgical operation. The changes in this group of students were transitory (hourly variations), while the data in the present study in surgical situations were on a daily basis.

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Prenatal Care

A Group Psychotherapeutic Approach

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• It has been well established that "normal" pregnancy gives rise to much anxiety whose source is variable. When not adequately dealt with, the anxiety may masquerade in the guise of physical symptoms such as fatigue, dizziness, nausea and vomiting, or, more often, as disquieting emotional counterparts, like irritability and depression.

A study was undertaken in the outpatient obstetrical department at U.C.L.A. utilizing a group psychotherapeutic approach. The results helped the patients and offered training to staff in dealing with emotional problems of pregnancy. Patients were seen in groups of seven, twice a month for one-hour sessions. Participating in each group were an obstetrical resident, a psychiatric resident and a nurse. The subject material was not selected beforehand. Groups were similar in that the expected time of delivery of the patients was approximately the same. Results of the study suggested that the much needed emotional support may be supplied in this way with little to no additional time expenditure on the part of the physician or nurse.

In the field of obstetrics, much has been written regarding the emotional requirements of the prenatal patient,[1,2,12,18-22] and varying attempts at teaching psychiatric skills to the resident are being made.[10] Ideal prenatal care should have as its goals not only the continuing reduction of morbidity and mortality, but the emotoional well-being of the patient and her family as well. Programs have variably stressed education, relaxation and exercise,[8,24] and have utilized physical therapists and lay educators in order to free the obstetrician-nurse team to deal more effectively with the reduction of morbidity. It is difficult to criticize the value and merits of the individual programs. Certainly all are good in the sense that they attempt to answer a need. Whether the relegation of authority away from the physician is a good thing has been questioned.[13,17]

Although the present-day medical curriculum emphasizes the need for recognition and treatment of psychosomatic aspects of disease, too often in pursuit of specialty training programs, the resident physician finds little time available to deal effectively with even the most superficial anxieties that trouble his patients. Usually these anxieties are countered by authoritative reassurances and generally harmless drugs, which fortunately in the majority of instances offer sufficient temporary relief. This way of dealing with such problems may stem from a tacit "understanding" between physician and patient. The patient disguises emotional problems in a garb of physical complaints, and the resident physician, even though aware of the emotional origin of the problems, willingly treats them as physical. If the "palliative tablet" does not help or the emotional problems are more severe, psychiatric referral is always at hand. This practice avoids the strain of closer personal involvement with patients and helps perpetuate the dichotomy already existing between the treatment of physical and emotional disease.

The authors pondered whether many of the programs might not be allaying anxiety indirectly rather than getting down to the primary sources, and, further, whether the obstetrician could not deal with these more directly and thus more effectively. Could it be done without further encroaching upon the time of the busy resident who was desirous of offering his patient more than routine care?

For answers, using group psychotherapeutic techniques, we attempted to utilize the well established principles of prenatal care and at the same time more directly meet the emotional needs of the patient. Group therapy has been shown to be an effective method of treating anxiety associated with a variety of illnesses, both psychic and somatic.[6,9,23,30] Its use in obstetrics, in a formal sense, is rare, and its use with a psychiatrically "normal" pregnant population has been reported only twice to our knowledge.[7,16] Although group processes are an integral part of many prenatal programs, they generally are used in an indirect fashion. It is quite common, however, to find groups of women sharing their experiences about pregnancy.[12,18]

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Presented before the Section on Obstetrics and Gynecology at the 91st Annual Session of the California Medical Association, San Francisco, April 15-18, 1962.

Our study was based on the following considerations: (1) All "normal" pregnant women have substantial amounts of anxiety which ultimately affect the course of the antenatal period both physically and emotionally, their labor and delivery and their subsequent relationship to the newborn and to their family. (2) Many sources of the anxiety can be readily discovered and understood, and the anxiety diminished by utilizing group therapeutic techniques. (3) Such a program is practical for teaching residents, students and nurses how to deal with the emotional problems of pregnant women. (4) The program is not neglectful of the many physical problems that may arise in the course of pregnancy and it requires no extra expenditure of time by the physician.

METHOD

This pilot study was undertaken in the out-patient clinic of the Department of Obstetrics and Gynecology of the U.C.L.A. School of Medicine. Twenty-one experimental subjects and 48 controls were included, unselected except for the following criteria: (1) No overt psychiatric disorder was present; (2) the subjects had reasonable facility with and comprehension of the English language; and (3) they were willing to participate.

The subjects were divided into three groups of seven on the basis of similarity of trimester. At their first visit to the clinic a history was taken and a physical examination carried out by a medical student and an attending obsetrician. Then the patients were given appointments to the first group meeting. Routine laboratory work, immunizations, and Mantoux testing were done at this time. One-hour meetings were held twice a month in a conference room equipped with a one-way mirror and microphones for purposes of recording the discussion. Before each meeting, urinalysis was carried out and weight and blood pressure were recorded by nurses.

At the first meeting the patients were informed that they had been arbitrarily assigned to us for their prenatal care and that we chose to meet in a group setting in order to discuss together problems common to pregnancy. We did not identify our groups as experimental. In order to lessen differences between persons in the experimental group and the controls, we encouraged participation in our regular evening educational lecture-film series which were available to all our obstetrical patients. Referrals to neighboring Y.W.C.A. courses were given to those expressing interest in natural childbirth training; participation in those courses was neither encouraged nor discouraged. Individual appointments with the obstetrical resident were made at approximately 24 weeks and again at 37 weeks. These were held in the regular obstetrical clinic examining rooms and the usual prenatal examinations were performed.

TABLE 1.—*Total Hours Spent by Physician and by Patient in Group Program as Compared with the Usual Clinic Program.*

	Usual Program		Group Program	
Month of Pregnancy	No. of Visits	Time in Minutes	No. of Visits	Time in Minutes
3rd; first visit....	1	60	1	60
4th	1	10	2	120
5th	1	10	2	120
6th	1	10	*2	120
7th	2	20	2	120
8th	2	20	2	120
9th	4	40	*2	120
Total visits and hours	12	2 hr. 50 min.	13	13 hr.
Resident physician Total hours		19 hr. 50 min.		15 hr. 20 min.

*10 minute visit with physician.

Each of the bimonthly group sessions was attended by an obstetrical resident, a psychiatric resident and two nursing instructors. When guests were present in the adjoining observation room their presence was discussed and permission was obtained for the use of the microphones. Topics were spontaneously introduced from the group. The participants were encouraged to answer the questions of others in the group except when an authoritative reply was expressly asked of the physician. Occasionally, on the initiative of the resident or patient, other individual appointments were arranged as indicated. There was no evidence that this occurred any more frequently than it did with the control group. Although the physician-patient relationship was more intimate and intense, it did not result in appreciably greater demands on his time than were made in the routine clinic program.

Table 1 shows a comparison of actual hours spent by physician and patient in the group program and in the usual clinic program.

TESTS AND RESULTS

Psychological testing was done (1) to describe the patient groups, (2) to record their attitudes toward pregnancy,* and (3) to evaluate changes in morale and in attitudes as a part of pregnancy and as a result of the group sessions.

Fifty-one subjects completed the Shipley Institute of Living Scale, the scores of which were converted to estimated scores on the Wechsler Adult Intelligence Scale.[29] The average estimated Wechsler intelligence quotient was 109, somewhat above the adult population average. There were only small, nonsignificant differences between the experimental and the control groups and between the primiparous and multiparous patients.

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*References 18, 22, 25-28, 35, 36.

Forty-two patients completed the Minnesota Multiphasic Personality Inventory (MMPI) early in their clinic contacts.[15] On the eight major psychopathology scales, the group averages were approximately one-half to one standard deviation in the pathological direction from the adult normal average.[34] An overall 45 per cent had one or more scores in the pathological range, as contrasted with from 15 per cent to 20 per cent pathological profiles among unselected, non-psychiatric adults. About one-third of the patients showed mild to moderate sociopathic trends, suggesting traits of nonconformity, rebellion and lack of self-restraint or inhibition. (Perhaps inhibited and particularly modest women avoid such a teaching clinic.) A smaller subgroup had profiles indicating mild depressions, and the other profiles were of varied types. There was a slight but significant tendency for the multiparous patients to have more pathological profiles, although this was not concentrated in any area of psychopathology. Postnatal testing was not sufficiently complete to show clear trends.

An inventory of 104 True-False items pertaining to pregnancy, childbirth and related attitudes was developed. Sixty-seven women completed this form at or shortly after their first clinic contact, including both treatment group patients and controls.

Several of the items reflected a very positive interest in discussing personal problems with their physician. Ninety-five per cent responded "True" to the statement, "Talking about my worries and fears makes me feel much better." Eighty-seven per cent felt their physician was interested in them as a person, and only 9 per cent were afraid that the physician would think less of them if they talked about their fears. Sixty-three per cent explicitly agreed, "I would feel comfortable telling my doctor my personal problems."

Among these women 56 per cent reported they would like to go through "natural childbirth" and 71 per cent wanted to be awake when their baby was born. Sixty-three per cent felt a husband should stay with his wife throughout labor, and to the item, "I think that if both husband and wife wish it, the husband should be allowed to watch the delivery," 89 per cent answered "True."

In comparing the answers of the primiparous patients with those of the multiparous, more of the latter were unhappy about being pregnant. This was reflected in the attitude on such items as: "Most women are happy to be pregnant"; "Early in the pregnancy, losing the baby would have been OK in some ways"; "I wish my husband knew what it was like to be pregnant."

To further analyze these items, nine of the obstetricians were asked to answer the 104 items "as you would expect an average pregnant woman to answer them." Four of these men were members of the staff and five were residents. They were consistently in error on only 20 per cent of the items—a high accuracy compared to many response prediction studies. Their errors were very largely among items reporting fears, inhibitions and frustrations, where they expected the negative feelings to be consistently expressed, but they were not. These included such feelings as fear of childbirth, of losing the baby or that the baby would be abnormal, resentments of the husband, and fear of losing one's figure. It is an open question whether the women were covering over these feelings or actually were not distressed by them as consistently and as intensely as expected.[5,12,18]

Where a majority of the staff predicted one answer (True or False) and the residents predicted the opposite, the staff was right 31 times of 34. This would directly suggest that one increasingly learns these patient attitudes with continuing experience. The point offered here is that group sessions such as were held in this project offer an ideal situation to learn and understand these patient attitudes.

COMMENT

In evaluating the results of our experience we felt that the experimental sample was too small to offer a sound basis for broad generalization. Nevertheless, a number of our subjective impressions seem to deserve mention.

The concept of the "ideal pregnant woman," as proffered by theoretically oriented investigators, implies that significant anxieties in pregnancy are pathological.[4,12] Our experience, corroborating the writings of others,* suggests that "normal" pregnant women have many anxieties; the extent and universality of anxieties are greater than we had expected.

Multigravid patients, in contrast to prevailing opinion, are equally in need of emotional support during pregnancy, for often the experiences of previous pregnancy seem to enhance rather than diminish anxiety.

The work of Bibring suggests that much of the florid psychopathologic manifestations of parturients is limited to the pregnant state. This might be made analogous to other stressful periods in the emotional growth of the individual (adolescence, menopause). One might argue that this emotional stress is usually handled by the natural "healing processes" inherent in the individual, and that there is no need for assisting these processes with psychotherapy, since the effort might aggravate emotional conflicts which might better be left undisturbed. It was not our impression that the group method aggravated psychopathologic states; rather, it clearly seemed to relieve the existing anxiety. An interesting but technically difficult study to undertake would be one wherein psychological examinations could be performed on a series of pregravid patients who would then serve as their own controls during a subsequent pregnancy. This might lead to the documentation of patterns of profile shift in reaction to pregnancy, about which the authors could only speculate at this time.

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*References 5, 8, 18, 20, 24.

Fear of pain, mutilation and possible death, loss of self control, changes in body image and bodily sensations, the possibility of a defective child and relationships with physicians, nurses and hospitals were major sources of anxiety expressed in the group sessions. Preexisting conflicts with parents, husbands and other authority figures frequently appeared to be exacerbated by the demands of pregnancy. Other sources of anxiety, rarely discussed, concerned sexual relationships, contraception, guilt and resentments toward medical personnel.

The manifestations of anxiety were predominantly depression[32] and somatic complaints. These symptoms appeared coincidentally with periods of emotional stress and seemed to remit coincidentally with the resolution of emotional conflicts.

We began the meetings with set agenda and various other formal approaches which we soon recognized as manifestations of our own anxiety. With additional experience and an awareness of the gradual formation of a group identity, we were able to permit the patients to discuss topics of greatest importance *to them.* Our subsequent activity was only to stimulate the discussion and to moderate it as necessary. The patients too, at first, were anxious about the meetings. The majority, however, soon became comfortable, enthusiastic and cooperative. In some, significant changes in attitudes were apparent, with considerable reduction of preexistent fears, a mature acceptance of responsibility of motherhood and a realistic awareness of psychic causation of various somatic symptoms. A few patients remained uneasy and unenthusiastic throughout the period of prenatal care. These women seemed to be those who were either inherently suspicious and defensive or who had developed a life-pattern of dealing with emotional stresses by somatization. To these women our attitude that emotional stresses could be pertinent to their physical wellbeing was antithetical. It appeared nevertheless that they experienced some diminution of their anxieties as pregnancy progressed, and they certainly stimulated the groups to lively controversy over the issues that were stressful to them.

Discussion with the participating nurses after the group sessions revealed the presence of a strong rapport between patients and nurses that differed somewhat from the relationship of the patients to the physicians.[33] This observation is, of course, not unique to this experimental situation and is probably related to both the difference in sex and the different roles the patient assigns to those who undertake her care. An awareness of this rapport and its source suggested that we utilize the nurses in an active therapeutic role within the group structure. Their presence subsequently served as an additional source of information and they provided critical observations to evaluate the group processes. The experience afforded the nurses a greater amount of intellectual stimulation than that ordinarily present in routine clinic care and tapped an otherwise dormant source of therapy.

As a training device we feel such a program offers many advantages not present in more didactic settings for the teaching of psychiatric skills. It entails no further time expenditure on the part of an already busy obstetrical resident. It enhances the working rapport of the participating disciplines and the primary emphasis upon patient care. Of additional benefit to the psychiatric resident is the opportunity to deal with "normal" subjects and to practice preventive psychiatry. The obstetrical resident under guidance gradually loses his sense of discomfort, usually present in his dealing with psychosomatic disease, and can begin to handle such problems with greater skill and understanding through repeated exposure. We believe that either resident, alone, could conduct the meeting as a result of the experience gained, and that an obstetrician with psychiatric orientation would feel quite comfortable in the group atmosphere.

The expedient alleviation of emotional problems through group psychotherapy is well known in fields of medicine other than obstetrics.[6,14,23,30] Its efficiency in helping small groups of patients with common problems has been demonstrated in psychiatric disorders and psychosomatic conditions. From the limited experience herein described, utilizing it in a prenatal program seems to us quite promising.

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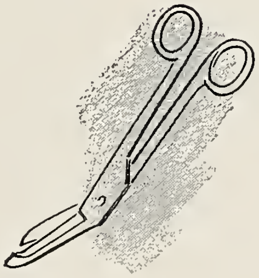

Hay Fever

A Comparative Clinical Evaluation of Treatment with Aqueous Pollen Extracts, Alum-Precipitated Pyridine Pollen Extracts and Aqueous Pollen in Oil Emulsions

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• Three different types of pollen extracts are currently being used in the prophylactic treatment of hay fever. A comparative clinical study of their efficacy reveals that all are about equally efficacious. The alum-precipitated pyridine pollen extracts may be slightly better. Since only 14 to 16 injections are required for prophylactic treatment, they may well replace the older aqueous pollen extracts, 20 to 35 injections of which are usually necessary to provide relief.

The aqueous pollen in oil repository method of treatment needs only one to four injections for comparable results, but this so-called "one-shot" treatment can only be administered by one who is trained in emulsion therapy and has come to know by experience the proper maximum dose.

CURRENTLY there are three kinds of preparations used in injection therapy of seasonal allergic rhinitis due to pollen—aqueous pollen extracts, alum-precipitated pyridine pollen extracts, and the aqueous pollen in oil emulsions employed in the so-called "respository" treatment.

Aqueous Pollen Extracts

Subcutaneous injection treatment with the aqueous pollen extracts for the relief of hay fever is the oldest and most widely used. It is considered efficacious and, except for a constitutional reaction which may occur if an improper dose is given, is without danger in administration. Aqueous pollen extracts can be easily made in one's own office laboratory or can be obtained from commercial sources. Treatment is usually prophylactic or preseasonal, although sometimes these preparations are used during the height of the hay fever season for amelioration of symptoms.

Hyposensitization is brought about by a series of subcutaneous injections of increasing amounts of the specific pollen allergens to which the patient is clinically sensitive. However, exactly how hyposensitization is accomplished by this means has never been adequately explained. One theory is that the injection of potent specific allergens calls forth the production of blocking, neutralizing or immune antibodies. The antibodies are relatively heat stable and do not have the property of sensitizing the skin of a normal individual. They compete with the skin-sensitizing antibodies in uniting with the antigen without releasing the noxious chemicals that produce the allergic reaction. Since it has never been unequivocally proved that there is a correlation between clinical improvement in the patient and the titer of the immune blocking antibodies in the serum, it is probable that some other mechanism is at work either in place of, or in addition to, that of blocking antibody formation.

Alum-Precipitated Pyridine Pollen Extracts

Treatment with alum-precipitated pyridine pollen extracts is being used by a limited number of allergists, mostly experimentally. As with the aqueous pollen solutions, the injections are administered subcutaneously in a series of gradually increased doses. The treatment is primarily prophylactic. These extracts are not simple to prepare and are not currently commercially available. A laboratory with adequate ventilation is necessary to get rid of the especially noxious odor which arises from the pyridine used in preparing them. The alum-precipitated pyridine pollen extracts used in the present study were prepared by Margaret Strauss of the New York University Hospital Allergy Laboratory, as follows: The extracting fluid consisted of one part pyridine and one part 0.3 per cent sodium carbonate solution. Non-defatted pollen was thoroughly mixed with a specified amount of this fluid and the mixture was allowed to stand for three days in a cool room, after which the liquid was filtered from the solids and then was Seitz-filtered for sterilization. Next, under sterile conditions, one part of sterile distilled water was added to one part of the pyridine-bicarbonate pollen extract, the mixture being stirred constantly as this addition was going on. Then one part of sterile 2.0 per cent potassium aluminum sulphate in one-fourth normal sulphuric acid was added. This formed a

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Presented before the Section on Allergy at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

precipitate. After standing overnight, the mixture was centrifuged and the supernatent solution discarded. The residue was washed four times with large quantities of sterile saline solution, sterile glass beads being used to separate the particles of the precipitate and to facilitate washing. The final volume of the suspension was then made up to the initial volume with sterile saline solution. A protein nitrogen determination was run on this final sterile product.

Advantages claimed for these extracts are:

1. All of the original fractions in the pollen grains are incorporated in the extract. This includes the oil fraction which some investigators insist contains an allergically active constituent.

2. The suspension is slowly absorbed, as has been shown by passive transfer studies. Thus, local irritation and swelling at the sites of the injections are avoided and there is less likelihood of constitutional reaction.

3. Because of slow absorption, fewer injections are required to maintain the patient's optimum dose. An obvious and recognized disadvantage of these extracts is that they cannot be used for testing purposes.

Aqueous Pollen in Oil Emulsions

Repository injection treatment of hay fever with an aqueous pollen in oil emulsion has received considerable attention in the lay as well as the scientific press. The fact that only a very limited number of injections are said to be necessary for hay fever protection has made this form of treatment desirable, especially in the opinion of the patient. Although the method is currently being used by an increasing number of allergists throughout the United States, the emulsions must be made with care.

The object is to produce a water in oil emulsion in which the water phase is aqueous pollen extract. The tiny droplets of aqueous pollen extract are contained within an external phase of mineral oil, kept in suspension by electrical charges set up during the process of emulsification and discharged slowly into the general circulation at intervals which have been determined by laboratory experiment.

The preparations are made by using a non-ionic emulsifier to aid the emulsion of aqueous pollen extracts with a specially prepared very light mineral oil. Since the introduction of this form of treatment, several different proportions of the oil and emulsifier have been suggested, as well as varying the amounts of the aqueous pollen extract. These variables, as well as those having to do with the means of producing the emulsion, pose difficulties for physicians wishing to use this method of therapy.

Many of the arguments that were initially advanced against the use of aqueous pollen in oil emulsions have been answered, but many objections remain: There is no standardized method of preparing the emulsion; the formula has been repeatedly changed and modified; the technique of examining the emulsion after preparation to determine if it is a good emulsion requires training in microscopy; there is no fully accepted method of determining the patient's optimum dose; care must be taken in administering emulsion deep subcutaneously, lest the emulsion escape to the dermis; there is suspicion that the inadvertent injection of emulsified extracts containing allergens to which the patient is not sensitive may result in the production of new immediate or delayed sensitivities. The question of carcinogenicity of mineral oil is an academic one and there is no certain answer. Millions of emulsion injections have been administered in a period of 20 years with no reports of carcinoma having been produced. Mineral oil has been used orally and rectally, obviously absorbed by lacteal vessels, for a long time with no carcinogenicity reported. However, should a case be reported tomorrow, the problem would then cease to be academic.

In preparing 100 cc. of the oil phase of the emulsion in this study, 35 ml. of Arlacel® A* which is a non-ionic emulsifier, and 65 ml. of Drakeol® 6VR† which is a mineral oil, were used. To this was added 0.02 ml. of Tween 80*. A hemoglobin pipette was used to measure this small amount. Tween 80 is a surfactant which was added to ease the work of emulsification and to lessen the milling and homogenization which frequently occurs with water in oil emulsions.

Equal amounts of the water phase, which was an aqueous pollen extract, and the oil phase were employed in preparing the emulsion. No more than 4.0 ml. was prepared at any one time—2.0 ml. of the oil phase (the Arlacel-Drakeol mixture) and 2.0 ml. of the aqueous phase (the aqueous pollen extract). Emulsification was carried out by means of the Conscot Emulsifier‡ for a period of at least 25 minutes, as advised by the manufacturer.

The Conscot Emulsifier is a power-driven machine providing 12 strokes per minute and delivering alternate thrusts to the plungers of two interchangeable 10 cc. Luer Lock syringes. The syringes are connected to each other by a double-hubbed 18-gauge needle, in the middle of which an emulsifying valve has been placed. This emulsifying valve contains a meshed disc with perforations of 0.0024 of an inch or 62 microns. As the water and oil mixture placed in one of the syringes is passed to the other and back and forth by action of the motor, shearing takes place. In addition, due to the turbulence of the flow, electrical charges are produced which result in the aqueous pollen mixture surrounded by a film of light oil. Although presumably suitable for repository injection, the emulsion was examined to make sure. This was done by placing a drop of the prepared emulsion on the surface of water in a beaker. If it did not retain its sphericity it was considered a poor emulsion and discarded. A more exacting test was used on all emulsions before use. That was the careful microscopic examination of a drop of the prepared emulsion. With the high-power lens the emulsion was examined for homogenicity and uniformity of globule size. Just before administration, the emulsion was placed in the Conscot machine for an additional ten minutes.

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*Arlacel A and Tween 80 were procured from the Chemicals Division of the Atlas Powder Company, Washington, Delaware.

†Drakeol 6VR was procured from the Pennsylvania Refining Company, Butler, Pennsylvania.

‡The Conscot Emulsifier is manufactured by the Conscot Company, Rockaway, New Jersey.

One milliliter was the amount administered in a dose that duplicated the optimum dose reached by the patient the previous year with aqueous pollen extract therapy. In this kind of therapy, as with the other two previously described, no completely acceptable explanation has been advanced with regard to the mechanism by which the water in oil emulsion produces immunity.

Clinical Evaluation

A clinical evaluation and comparison of results of parenteral prophylactic treatment of hay fever is difficult, for in this disease there is a preponderance of subjective symptoms over objective findings. It is necessary to rely upon the patient's ability to recall, estimate and keep an accurate record of the severity and frequency of symptoms. In evaluating results, the age and sex of the patient, his work, play or exercise, environmental influences, emotional problems, climatic changes, as well as fluctuation of the amount of circulating pollen in the air from day to day and from season to season, must be taken into consideration. In addition, there are psychological factors at work. Some patients are hopeful when they are introduced to a new form of treatment and in their reports tend to minimize their symptoms; others are apprehensive and are apt to magnify them. Some physicians are enthusiastic over every new therapeutic procedure; others are prone to criticize a new method or departure from the type of therapy they have been accustomed to use. These factors all affect the patient's subjective response.

In order to circumvent and prevent or minimize biased reports on a new drug or new method of treatment, double blind studies using placebos have been demanded of clinical investigators. Some such studies are of value, particularly in evaluating drug efficacy, but the variables of age, sex, work, play, exercise, environmental influences and emotional upsets, not to mention the reliance the physician must place on the intelligence of the patient and the exactitude with which he regards and records his discomfort, still remain. That there are no two people exactly alike who can be evenly matched and kept in the same environment is self evident. That physicians attempt to guess, consciously or unconsciously, which is the placebo and which is not, thus becoming prejudiced in one way or the other, is natural. In the last analysis, one must rely upon the credulity of the patient and the exactness of his records. An additional objection to using placebos in determining results of hay fever treatment, particularly when using aqueous pollen in oil emulsion therapy, is based on the fact that the oil phase of the emulsion is an adjuvant. Although it is not entirely proved, some investigators believe or suspect that mineral oil, in itself an incomplete adjuvant, increases the antibody titer in patients who have received antigen injections even several years previously. Since all of the patients in this study who received aqueous pollen in oil repository treatment had had conventional antigen injection treatment previously, the injection of an antigen-free emulsion could hardly have been considered a placebo.

For these reasons no double blind studies were employed in evaluating the results of treatment with the aqeuous pollen extracts, the alum-precipitated pyridine pollen extracts and the aqueous pollen in oil emulsions. The patients were taken in consecutive order as they came in to be treated. In assessing results at the end of the hay fever season, I interrogated the patients with as much objectivity as possible. The patients were urged to give an unbiased, unprejudiced and honest report. Some of those who received aqueous pollen therapy and some who received alum-precipitated pyridine pollen injection therapy had never been treated before with prophylactic pollen injections. All of those who received the aqueous pollen in oil repository treatment had been treated previously with aqueous pollen injections. Since there may be a "holdover" from treatment in a previous year, the results in each group were tabulated separately.

Results with Aqueous Pollen Injection Therapy

Results reported by 175 patients treated prophylactically against spring (grass) hay fever in 1961 with aqueous pollen extracts were as follows:

A—One hundred sixty patients previously treated for one or more years—Excellent or good, 128 cases or 80 per cent; fair, 18 cases or 11.2 per cent; poor, 14 cases or 8.8 per cent.

B—Fifteen patients with no previous treatment—Excellent or good, 9 cases or 60 per cent; fair, 4 cases or 26.5 per cent; poor, 2 cases or 13.5 per cent.

Good to excellent responses indicated that the patient had no symptoms, or if he sneezed a few times or had mild itchy eyes during the hay fever season, the symptoms were so mild that no additional medication was necessary. A fair response indicated that the patient had symptoms at the height of the hay fever season which required some additional medication such as antihistamines. Poor results indicated that considerable medication was necessary for relief and that the injection treatment afforded very little, if any, relief.

Results with Alum-Precipitated Pyridine Pollen Injection

For 57 patients treated prophylactically against spring (grass) hay fever in 1961 with alum-precipitated pyridine pollen extracts results were as follows:

A—Forty-seven patients previously treated for one or more years with aqueous pollen extracts—Excellent or good, 44 cases or 94 per cent; fair, 1 case or 2 per cent; poor, 2 cases or 4 per cent.

B—Ten patients with no previous treatment—Excellent to good, 7 cases or 94 per cent; fair, 1 case or 3 per cent; poor, 2 cases or 20 per cent.

Dr. Merle Moore of Portland, Oregon, treated a similar but slightly larger series during the spring of 1961. The only difference in his technique was that instead of interrogating the patients himself, he had a third party question them and record the results, thus eliminating the possibility of subconscious bias. Dr. Moore's results were as follows:

A—Ninety patients previously treated for one or more years with aqueous pollen extracts—Excellent to good, 74 cases or 82 per cent; fair, 13 cases or 15 per cent; poor, 3 cases or 3 per cent.

B—Thirty patients with no previous treatment—Excellent to fair, 25 cases or 83 per cent; fair, 3 cases or 10 per cent; poor, 2 cases or 7 per cent.

Results with Aqueous Pollen in Oil Repository Injection Therapy

One hundred thirty patients treated six to eight weeks before the 1961 spring (grass) hay fever season with a single injection of an aqueous pollen in oil emulsion extract reported results as follows:

Excellent to good results, 103 or 79 per cent; fair, 14, or 11 per cent; poor, 13, or 10 per cent.

It should be reemphasized that all of these patients had received previous hay fever injection therapy with aqueous pollen extracts and that their probable optimum dose had been determined.

REACTIONS

In the 175 patients treated with aqueous pollen extract no reactions occurred with the exception of soreness of the arm at the injection site in a few cases. The same was true of the 177 patients treated with alum-precipitated pyridine pollen. However, in the group of 130 patients treated with the aqueous pollen in oil emulsion, 37 (28 per cent) had reactions of various types, ranging from mild soreness at the injection site for periods of a day or two to as long as three months, to the formation of nodules and abscesses. Constitutional reaction occurred in one case.

It has been suggested that the side effects or complications associated with aqueous pollen in oil emulsion injection therapy are due to the use of an improperly prepared emulsion, or to the formula used or to the manner in which the injection is administered. However, the formula, the emulsifying technique and the injection method used in this study were the ones acceptable to most workers in hay fever emulsion therapy.

COMPARISONS

Comparison of clinical results in the treatment of hay fever is difficult and in some cases impossible. In the first place pollen counts vary from one area to another in the same city, winds change, some patients are out of doors more than others, each patient estimates his degree of suffering differently. These are but a few of the factors that must be taken into consideration. Other factors have already been mentioned. Secondly, patients who have received prophylactic injection therapy in previous years may well have a "holdover" effect, and a comparison of the results in these patients with results in patients who have had no previous prophylactic therapy may be unfair. Nevertheless, bearing these considerations in mind the data presented in Charts 1 and 2 are interesting.

In Chart 1, 80 per cent of patients who had never previously received any form of prophylactic injection treatment are shown as having had good to excellent results from the alum-precipitated pyridine pollen injections, while results of that order were reported for only 60 per cent of those treated with aqueous pollen. The patients who received the aqueous pollen injections did better in the "fair" classification—26.5 per cent in contrast to 10 per cent for those treated with the alum-precipitated pyridine pollen. In the "poor" category, there was little difference between the two types of treatment. It is recognized that a further cloud upon the validity of the comparison of these two groups is that there were only 15 in one as against 40 in the other.

In Chart 2, data on results of all three forms of treatment in all the patients treated are compared.

DISCUSSION

If any conclusion can be drawn from the comparisons available in the present study, it is that alum-precipitated pyridine pollen prophylactic treatment has a slight edge in efficacy of treatment, but it probably is unfair to compare results with aqueous

CHART 1

SPRING (GRASS) HAY FEVER SEASON—1961
NONE OF PATIENTS HAD RECEIVED DESENSITIZATION PROPHYLACTIC TREATMENT IN PREVIOUS YEARS.

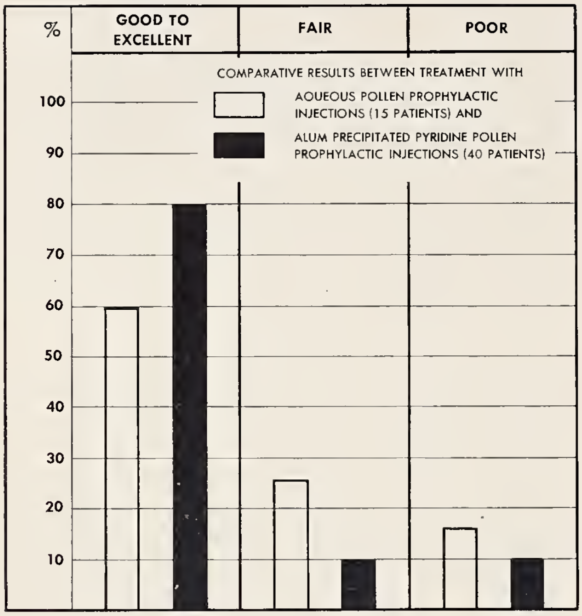
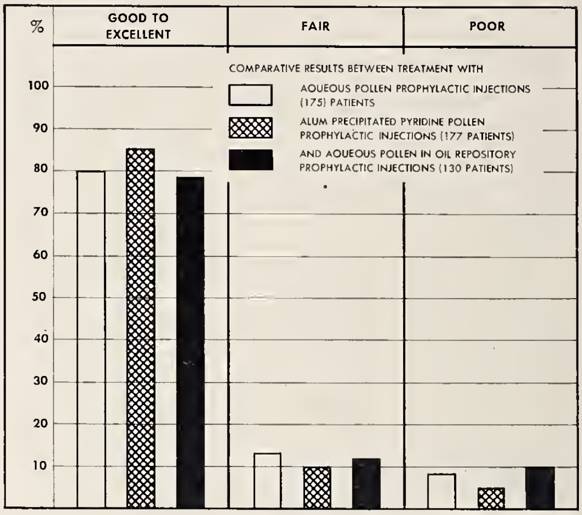


CHART 2

SPRING (GRASS) HAY FEVER SEASON—1961



pollen extracts which have been in use for fifty years with the results obtained by treatment with alum-precipitated pyridine extracts, which are only now being investigated, and with the even newer aqueous pollen in oil emulsion therapy.

There is no doubt that both the alum-precipitated pyridine extract and the aqueous pollen in oil emulsion possess an advantage—fewer visits to the physician's office. If there is no danger to the patient with these newer methods and the results are equal, they will of course supplant the aqueous pollen injections. The repository treatment requires from one to four or five injections annually, depending upon the patient's sensitivities. The alum-precipitated pyridine method requires about 12 to 16 injections, sometimes fewer. Apparently any number of antigens can be included in the alum-precipitated extract and the number of injections depends primarily upon the degree of the patient's sensitivity. Aqueous pollen treatment usually requires 20 to 35 or more injections, depending upon the number of the patient's sensitivities and the degree.

In the series of cases reported, all patients were given what was considered to be their optimum dose. With aqueous pollen extract, the optimum dose was determined by the degree of local reaction obtained at the site of the injections and the relative freedom of symptoms by the patient. A similar method was employed to determine the optimum dose for the patients who received the alum-precipitated pyridine pollen extract. Patients who received the aqueous pollen in oil emulsion injection were given the optimum dose they had reached previously with aqueous pollen extract administration.

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Skin Closure

A Disposable Atraumatic Instrument for Office Procedures

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• A disposable applicator with a suture clip bearing unusually fine spicules, which can be kept sterile in an envelope on an office shelf or in a physician's bag, facilitates the carrying out of the cosmetic closure of skin lacerations and incisions as an office procedure.

The spicules of the clips are so fine that they cause practically no bleeding when they are placed or removed. The needle-prick scarring and the "ladder" pattern caused by the placing of sutures with a needle are avoided.

DESPITE THE INCREASING use of the hospital, even for seemingly minor procedures, operations in the office still make up a large part of the practice of many physicians. The closure of small lacerations, biopsy procedures, small tumor excisions and even incision and drainage are more and more a part of office practice—a convenience to the patient as well as the physician. Want of means for painless, convenient, cosmetic closure of a wound or incision makes hospitalization necessary for procedures that otherwise could be done in a physician's office.

While there are many ways to close a laceration or surgical incision, almost all the usual ones have some drawbacks. The use of interrupted sutures requires needle, silk and other instruments, all of which must be kept sterile. In many instances, only one suture is needed, and the remaining material is wasted. Using such suture material requires draping the area of operation with at least three sterile towels to prevent contamination of the thread. Also, sewing with a needle often necessitates local or even general anesthesia.

Use of clips of the Michele type, although an improvement over the needle technique, has shortcomings. Not only does applying them cause pain but the large teeth of each clip often leave scars. Another drawback is that the saddle of these clips is so high above the wound that it is almost impossible to apply a pressure bandage, which often is needed.

A third way of skin closure commonly used in office procedure is application of a butterfly band. While easy to use, the adhesive rests on the top layer of the skin, which is shed daily, the resultant slippage reducing the needed traction at a time when exact approximation of wound edges is most important. Use of the butterfly also precludes the proper eversion of the skin edges which is so important for a cosmetic result.

In light of these difficulties, any otherwise acceptable method which would afford ease of application and a cosmetic result should be welcomed by physicians who carry out surgical procedures in the office.

A new skin clip that provides accurate, cosmetic skin closure with simplicity and speed has already been reported.[1-3] It has ultrafine spicules which make for application without pain, and when in place it lies so flat that pressure dressings can be applied neatly over it. After healing there is no scarring at the points of penetration.

The Brown-Wood applicator used for placing these clips was designed to hold ten clips and was originally intended for use in the operating room for major closures. Now the same principle has been used in the development of a disposable applicator, holding a single clip, which can be kept sterile in an envelope on a shelf in the office or in a physician's bag.

As applied with the disposable applicator, the clips bring the skin edges in gentle but accurate approximation (Figure 1). At the same time, the carefully calculated curvature of the penetrating spicules brings about the proper skin eversion for best cosmetic effect. The spicules are so fine that the clip may be used upon the face. In use, the instrument is held almost horizontally over the wound. Fine-toothed forceps or skin hooks rarely are necessary. The clips, whose spurs are so fine that they are almost invisible, go into the keratin easily. They should be placed with the distance between the spur and the line of closure the same on both sides. Then gentle pressure on the compression arms of the disposable applicator brings the limbs of the steel clip inward and the skin edges into excellent approximation. The accurate obliquely curved spicules of each clip ease the wound edges together into just the proper degree of upward eversion and side by side approach into intimate contact. It is not necessary to push the wound edges together tightly. The slight postoperative edema aids in the approximation procedure. If more than one is needed, the clips may be applied close together, overlapping like fish scales (Figure 2).

Submitted June 7, 1962.

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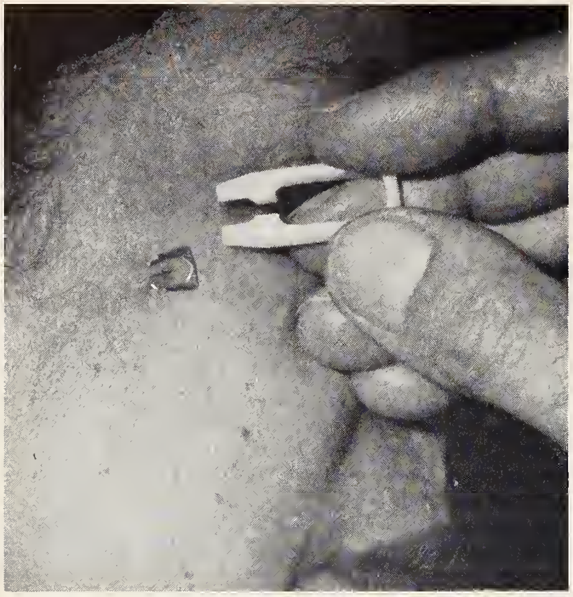

Figure 1.—The approximation of the skin edges, using the disposable plastic applicator—in this case to close the skin after excision of biopsy specimen.

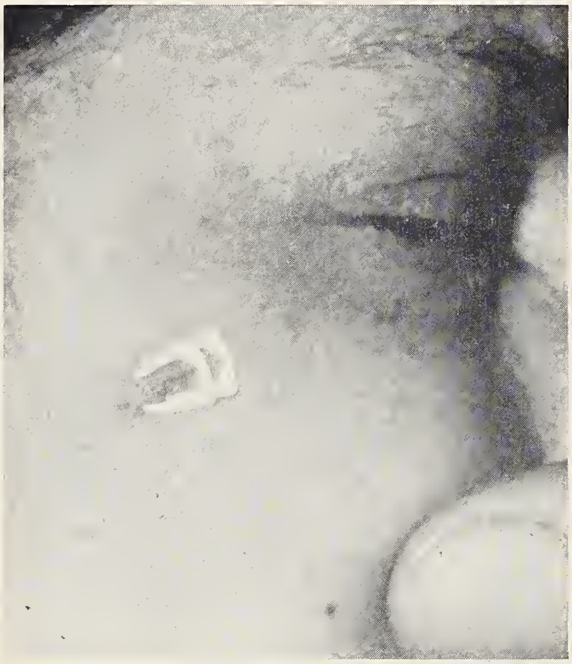

Figure 2.—If more than one clip is needed, they can be overlapped.

In the manufacturing process the spicules of these clips are sheared to points much sharper than those made by the punching out method used in making clips of other kinds (Figure 3). The spicules penetrate enough to hold firmly, yet with so little trauma that local anesthesia is not necessary. Rarely does bleeding occur at the site of penetration. The clips are of stainless steel and have been tested against oxidation in saline and in Ringer's solution.

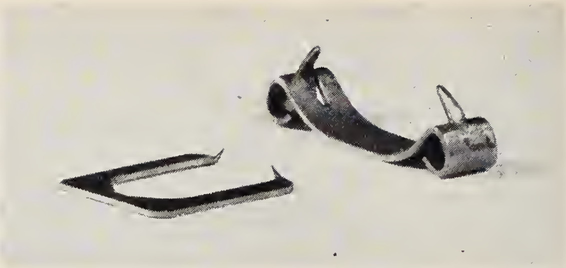

Figure 3.—Comparison of the spicules of the Michele-type clip (right) with those of the Brown-Wood clip. The sheared points and minimum penetration depth of the latter clip are obvious.

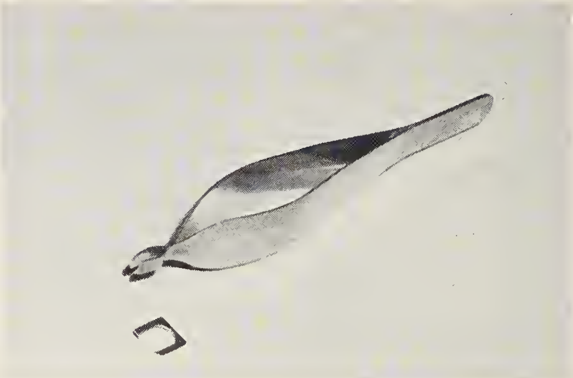

Figure 4.—The thumb-operated forceps for case of removal of Brown-Wood clips.

There seem to be two contraindications to the use of these clips: They should not be applied over the eyelids because of the possibility that they might fall into the eye, and they should not be used for purposes of traction, since traction might disturb the line of closure, with bad cosmetic result. If traction is needed to relieve tension upon the skin, as it may be in larger wounds, traction or anchor sutures may be buried below the surface of the skin before closure with the clips is commenced.

The clips are usually removed on the third day. A simple thumb forceps remover, whose limbs are inserted between the arms of the stainless steel clip (Figure 4) is available for the purpose, but any conventional clip-remover will do as well. Compression on the removal forceps spreads the points of the clip apart, which withdraws them from the skin. Rarely is there any bleeding on removal. No pinpoint scars remain, and no "ladder" marks as when tight thread sutures are employed.

9735 Wilshire Boulevard, Beverly Hills (Brown, Adolph M.).

1. Brown, A. M.: A new surgical skin suture clip for wound approximation, Industrial Medicine and Surgery, 30:6, 223-234, June 1961.

2. Brown, A. M., and Marcus, P. M.: Cosmesis and speed in wound closure; a new suture clip, Western J. of Surg., Obst., and Gynecol., 69:269-271, Oct. 1961.

3. Brown, M. E.: A dermatologic skin suture clip, Arch. Derm., 84:663-666, Oct. 1961.

Bronchographic Contrast Mediums

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• In a study of 102 bronchograms for purposes of comparing the contrast medium Visciodol® (a mixture of iodized peanut oil and powdered sulfanilamide) with Iodochlorol® (an iodized poppyseed oil), it was observed that Visciodol is more readily administered, produces better bronchograms with less alveolar filling and clears from the lungs far more rapidly and completely than does Iodochlorol.

Certain even newer highly promising agents are available but specific results with them are not included with this report.

Bronchography is a diagnostic procedure that is contraindicated when the information to be gained does not exceed the probable risk.

THE BISMUTH subcarbonate insufflation techniques devised by Jackson and Clerf and the barium sulfate in mineral oil method of Lynah were generally discarded soon after Forestier in 1925 summarized his experiences with iodized peanut oil (Lipiodol®) for bronchography. But iodized peanut oil and iodized poppyseed oil (Iodochlorol®) have well-recognized shortcomings, which has led to the trial of a number of radiopaque materials for bronchography, with variable success.

Insufflated powder is good for demonstration of the trachea and major bronchi, but it rarely shows anything not seen with less risk by bronchoscopy. Barium sulfate in oil is not readily eliminated from the tracheobronchial tree, frequently acts as a foreign body and occasionally produces oil pneumonitis. Other combinations of barium with iodized oils or as collodial suspension (Celobar®*)[24] still entail this possibility. Iodized peanut and poppyseed oils are simple to use and usually result in adequate bronchograms, but both tend to enter the alveoli and require months or even years for complete elimination. Oil pneumonitis is rare, but it has been reported with these agents, particularly after overfilling of a segmental bronchus.

Certain experimental agents such as Xumbradil®†[20] and Acmiodol®‡[15] have been less satisfactory than Lipiodol and Iodochlorol due to low viscosity and rapid alveolar filling. Other agents such as cesium chloride[22] entered the alveoli so rapidly as to be useless unless mixed with carboxymethylcellulose, but then became so irritating as to cause severe injury to bronchial mucosa. Thorium dioxide (Thorotrast®)[1] and Joduron B®[8] also seem too irritating. Some of the newer agents such as Bayer 1238 (Broncho-abrodil®),[5,13] iodized benzoic ester in peanut oil (Pulmidol®),[16] and the aqueous suspension of propyl-diol-diiodopyridone and diiodopyridone (Hytrast®)[17] seem quite promising, although present reports are insufficient for dependable conclusions. These newest agents all seem to give excellent contrast and are currently under investigation as to safety, route and rate of elimination, alveolar fill and other important factors.

In the past ten years, three agents have come into common use. Each gives good bronchograms, but not without definite drawbacks. The present literature usually discusses these agents: the propyl ester of diodone in aqueous solution with sodium carboxymethylcellulose to increase viscosity (Aqueous Dionosil®), the same ester in peanut oil (Oily Dionosil®), and a suspension of finely powdered sulfanilamide in iodized poppyseed oil (Visciodol®). Varying ratios of Lipiodol® and sulfanilamide have been studied[7] and Oily Dionosil has been mixed with sulfanilamide-neohydriol mixtures,[14] but only the routine forms of Dionosil and Visciodol are pertinent to the present discussion.

Aqueous Dionosil. This material is water soluble, the rapid elimination of the contrast dye is assured and the agent quickly loses radiopacity. It appears to be faster in bronchial filling, fills alveoli less and radiographically clears faster than the other agents. However, acute bronchitis or post-bronchogram pyrexia is frequently reported with this agent.[12,18,19] Experimental studies of this material in rabbit lungs show parenchymatous changes even four months after its instillation for a bronchogram.[2] The authors of that study attributed the parenchymatous damage to irritation by the carboxymethylcellulose vehicle.

Oily Dionosil. The peanut oil vehicle used in this preparation seems to be eliminated by a combina-

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Presented before the Section on Ear, Nose and Throat at the 91st Annual Session of the California Medical Association, San Francisco, April 15-18, 1962.

*Celobar® is: Barium Sulfate (65.3 gm. per cent), Methylcellulose (0.8 gm. per cent) in physiological saline.

†Xumbradil® is: Solution of Diodon® (diethanolamine salt of diiodo-pyriden-N-acetic acid) and sodium salt of cellulose glycolic acid ether.

‡Acmiodol® is 2-(2,4,6-Triiodophenoxy) propane, 27.0 per cent, 1-(2,4,6-Triiodophenoxy) hexane, 29.2 per cent, Cottonseed oil, 43.8 per cent.

TABLE 1.—*Study of Factors Affecting Adequacy of Two Contrast Media Used in Making Bronchograms*

Contrast Medium	Tracheobronchial Demonstration		Alveolar Filling		Radiopaque Residua After 24 Hours				
					None	Slight	Moderate	Much	Very Much
Iodochlorol® (102 patients)	very good	21	none	12	1	10	1	0	0
	good	31	slight	26	0	11	11	4	0
	fair	28	moderate	29	0	3	12	11	3
	poor	16	much	28	0	0	2	21	5
	inadequate	6	very much	7	0	0	0	1	6
Visciodol® (38 patients)	very good	20	none	17	5	10	2	0	0
	good	12	slight	17	0	12	5	0	0
	fair	6	moderate	4	0	1	1	2	0
	poor	0	much	0	0	0	0	0	0
	inadequate	0	very much	0	0	0	0	0	0

tion of expectoration, swallowing and partial enzymatic hydrolysis.[9,19] It seems less irritating than Aqueous Dionosil, and pathologic studies have demonstrated less tendency to granuloma formation such as has been observed with plain Lipiodol.[12] However, even when post-bronchogram x-ray films show clearing of the radiopaque material, surgical specimens often reveal mucosal inflammatory changes, free oil in the alveoli and intracellular oil droplets.[6,25] Studies with rabbit lungs showed oil residua three months after instillation in 80 per cent and after six months in 70 per cent of the rabbits, with foreign body granuloma formation in most of the animals. Despite these irritating properties, this agent has been quite widely adopted because it is relatively easy to use.

Visciodol. Since the radiopaque component of Visciodol is oily and therefore is the relatively non-absorbable portion of this material,[3] and the viscosity-increasing portion of the mixture—sulfanilamide—is absorbable and then is excreted, it can be assumed that radiographic clearing represents elimination of sulfanilamide. There is the danger of allergic reaction to sulfonamide as well as to iodine and in certain cases the sulfanilamide has been thought to have caused partial methemoglobinemia.[11] Nevertheless, as early as 1953, one group of investigators reported over seven thousand Visciodol bronchograms without complication.[21] This agent has approximately three times the viscosity of Lipiodol,[4] and it rarely enters the alveoli except in bronchiectatic regions. In general, it seems to be less toxic than most other agents.[10,23]

Since some physicians still use the same Lipiodol methed described in 1925, it was deemed worth while to review the experiments which were the basis for our changes five years ago. In this study, Visciodol was compared with Iodochlorol as to adequacy of demonstration of the tracheobronchial tree, ease of employment, alveolar filling and post-bronchogram residua. Technical errors also were analyzed in terms of possible improvement of technique with each agent.

Basic Technique

Regardless of the material used, the technique was constant. Premedication and local anesthesia were the same as for bronchoscopy. A Stitt bronchographic catheter was inserted through the larynx under indirect laryngoscopy, using a curved catheter guide to facilitate control. Using a syringe connected to the catheter by an appropriate adapter, the bronchographic agent was injected under fluoroscopic control. During the injection, both the otolaryngologist and the radiologist were engaged in observing the fluoroscopic screen so that the injection rate and the patient's position were adjusted to assure the filling without overfilling of each bronchial segment. Inadequate anesthesia, delays allowing loss of the effectiveness of anesthesia, lack of cooperation by the patient and backflow of the agent through the larynx were the major causes of uncontrolled cough. This usually resulted in a poor bronchogram and, with relatively free-flowing agents, in excessive alveolar filling. Spot films were usually taken during the fluoroscopy with the patient erect and the x-ray apparatus at the routine 6-foot distance. Because the technique with children is somewhat different, no children were included in this study.

Precautions

Even more than with bronchoscopy, bronchography is contraindicated if the potential dangers equal or exceed the probable benefits of this solely diagnostic procedure. The respiratory reserve must be adequate. Severe dyspnea practically always presents an undue risk. Sensitivity to the agents to be used is a contraindication. Pulmonary secretions must not be enough to prevent adequate anesthesia and control of cough, to prevent adequate filling of the tracheobronchial tree by the bronchographic agent or to prevent adequate filling without causing dyspnea. Since the medical management of severe suppurative bronchitis is essentially the same as for bronchiectasis, the risk of bronchogram is not entirely justified if suppuration is bilateral and not amenable to surgical treatment.

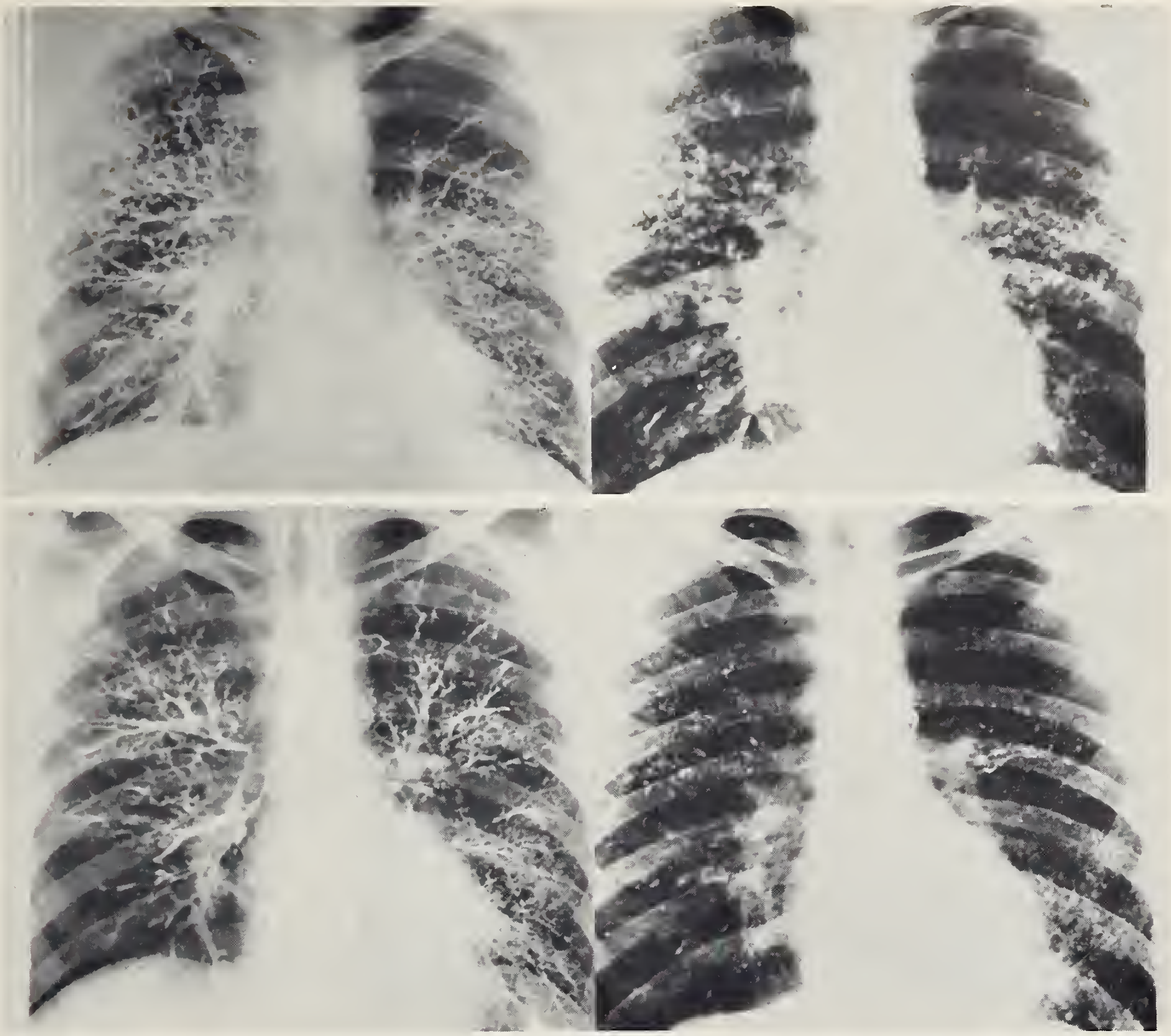

Figure 1.—*Upper left,* bronchograph taken with Iodochlorol as contrast medium. *Upper right,* 24 hours after injection of Iodochlorol. *Below, left and right,* corresponding films (same patient) with Visciodol as contrast medium.

Results

The present study includes all bronchograms performed by the authors using Iodochlorol or Visciodol in adult patients at the University of Illinois Hospitals during the two-year period from June 6, 1956, through June 4, 1958. This includes 102 bronchograms with Iodochlorol and 38 bronchograms with Visciodol. In 11 patients, for the purpose of this study, the bronchogram was performed using one of the two agents, and then, after an interval sufficient for radiographic clearing of the agent from the lungs as demonstrated by a new preoperative x-ray film, another bronchogram was made, using the other agent.

The general results are summarized in Table 1. The judgments as to adequacy of tracheobronchial demonstration, relative amount of alveolar filling and radiopaque material residual after 24 hours, were made by the authors, assisted by one of the radiology staff. These judgments were made without knowledge of the agent employed in any individual bronchogram. Every effort was made to be objective, although admittedly this is at times difficult. The illustrations (Figures 1 and 2) are from two of the patients who had a second bronchogram with the alternate contrast agent for comparison with their first bronchograms.

Avoidable technical shortcomings brought to light included:

- Inadequate demonstration of anterior segments of lingula or of upper lobe segments due to inadequate attention to these areas during positioning of the patient under fluoroscopic control.
- Inadequate anesthesia due to delay between anesthesia and carrying out of the procedure.
- Poor patient cooperation due to lack of explanation of the procedure to the patient.

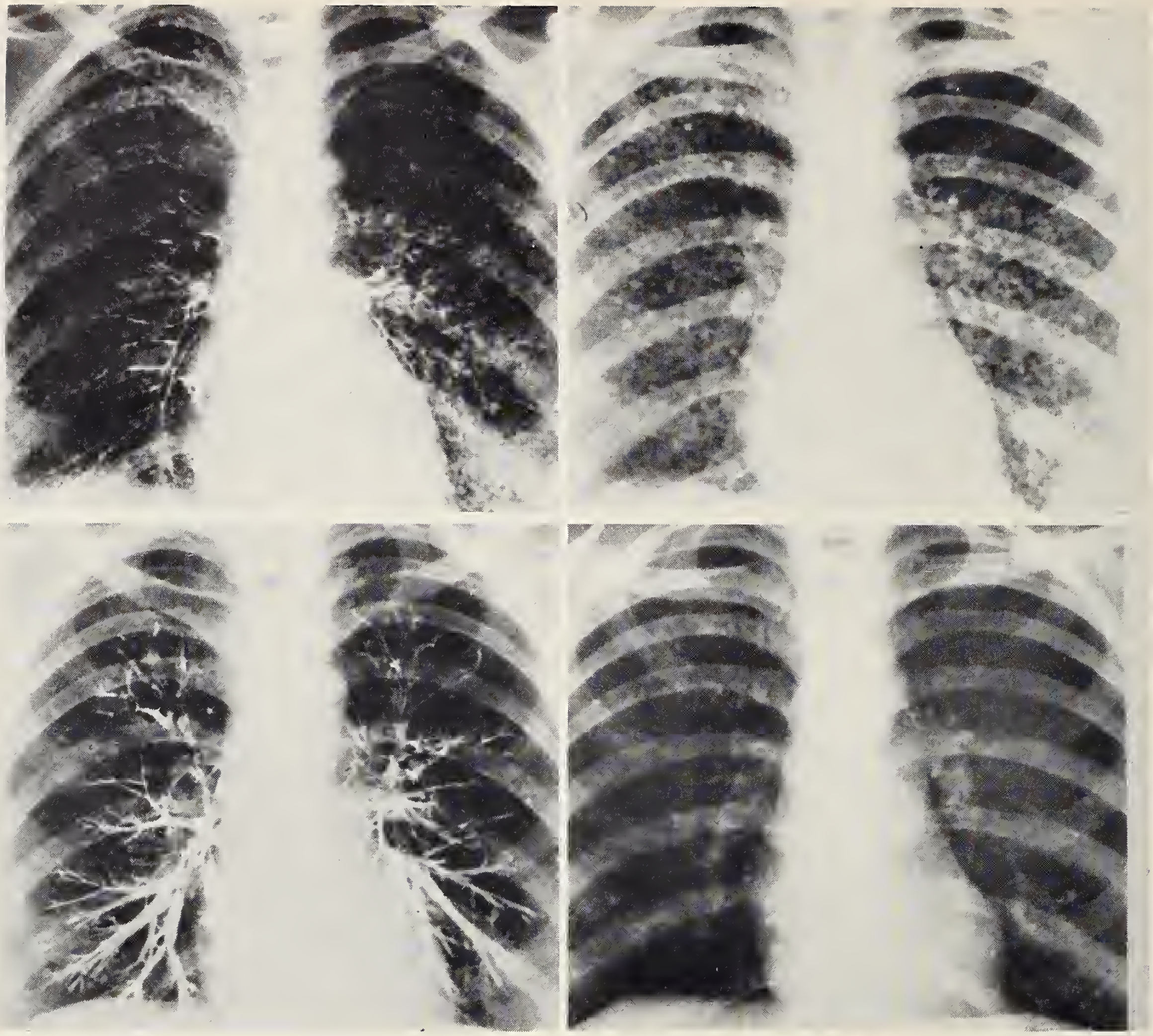

Figure 2.—The bronchograph at upper left was taken with Iodochlorol and that at upper right was taken 24 hours later. In the lower films (same patient as above) Visciodol was used and the interval was the same.

- Language difficulties making communication impossible.
- Incessant cough by one patient upon whom the procedure probably should have been avoided in view of this tendency.

In this series we noted no instance in which Visciodol when employed according to directions supplied by the manufacturer is any more difficult to use than any other agent. On the contrary, its slower rate of flow allowed better fluoroscopic control. An interesting observation with Visciodol was that it appeared to clear in one or two days, with the notable exception of areas of saccular bronchiectasis, which often appeared prominently on the 24-hour follow-up films. It might be an interesting point for further research to observe if residual Visciodol in any other areas could possibly represent malfunction of ciliary activity.

No matter what agent is used, one of the commonest reasons for excessive alveolar filling appears to be overfilling of the main bronchi. Twenty-five cubic milliliters of Iodochlorol or 30 ml. of Visciodol is adequate for a bilateral bronchogram in the average adult male, except where a large amount of the agent enters saccular of cystic areas.

In none of the patients in the series was any local or systemic reaction observed. In none was there bronchial fistula or postoperative delay of healing that could be attributed to the bronchogram.

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Accreditation of Nursing Homes and Related Facilities

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It was in the all too recent past that mention of a nursing home would conjure in the minds of most of us a picture of a rather ponderous and ornate structure whose designers had obviously had some far different domestic purpose in mind when it was built, the result being much makeshift and inconvenience when it was converted to its later humanitarian purpose. Yet it was at such an establishment that the convalescent, the chronically ill, the senile or the debilitated aged had to be taken care of if care could not be managed in his own home, at a relative's or possibly a nurse's house. Nursing care often was a labor of love, despite physical shortcomings, but sometimes left much to be desired. Actual experience of the patient, or observations by relatives or physicians, provided the only means of separating the good from the bad.

Problems in providing care for chronically ill persons have multiplied since World War II. As a result of changing economic forces and social habits, it has become more difficult for families, frequently with all adults employed, to care for the infirm, while at the same time the pronounced advancement in medical techniques has further widened the disparity between the care in general hospitals and home care facilities. So was born a great need for more and better establishments specializing in the care of long-term illness. The result of this was a steady increase in the number of nursing homes and related facilities—much of the increase being made up of large new units that were built for the purpose. Recent legislation providing for partial or complete payment of nursing home fees by government agencies has spurred the construction boom.

Because of the steadily increasing scope and importance of the chronic care facility, and because considerable qualitative differences develop when there is relatively sudden expansion in any field, it has been apparent for some time that a measuring method was needed so that a superior facility could be recognized, and also so that uniform standards could be set which could guide others in attaining a degree of excellence commensurate with modern medical and nursing advancements. This measure should augment and go beyond the requirements of licensure, which too often concern themselves with the appearance of the physical plant and pay little heed to the total care of the patient.

Interested parties noted the success which had attended the efforts of the Joint Commission on Accreditation of Hospitals to provide a standard of measure for the acute general hospital and the resultant improvement in hospital care in general. There were several attempts in various local areas in different parts of the United States to set up boards or groups concerned with similar improvement in long-term facilities. Some of these did well for a time, only to succumb to local or factional differences; others remained limited in scope. Also, there was interest on the national scale, particularly on the part of the American Nursing Home Association, but the very magnitude of the problem (and its cost) made progress agonizingly slow.

In California, little was accomplished before 1959. Then the California Joint Council to Improve the Health Care of the Aged, which had been created to appraise the available health resources for the aged and foster the best possible care for this group, recognized the important position nursing homes and related facilities occupied in providing for health care of old persons, many of them chronically ill. The Joint Council forthwith interested itself in the problem of improving the quality of long-term care. Many arduous hours over a period of nearly two years were spent by members of the Council in formulating a set of standards for these facilities by which comparisons could be made, specifically for the purpose of measuring, assaying and accrediting them. As the long experience of the Joint Commission on the Accreditation of Hospitals had resulted in a workable guide which had been used successfully throughout the United States for establishing and measuring hospital operation, the format of this body was adopted as a basis for the "Standards of Accreditation" set up by the group dealing with care of the aged. Modification was necessary, with deletion of the non-pertinent sections and the addition of items described jointly by the American Medical Association and the American Nursing

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Dr. Schoff represents the California Medical Association on the California Commission on Accreditation of Nursing Homes and Related Facilities.

Submitted August 3, 1962.

Home Association in the pamphlet *Guides for Medical Care in Nursing Homes and Related Facilities,* plus certain additions made by members of the Council itself.

After the Joint Council had completed its work on the Standards, it was necessary to implement them. It was for this purpose that the California Commission for the Accreditation of Nursing Homes and Related Facilities was created as a voluntary, non-profit organization composed of representatives from its supporting member organizations: the California Dental Association, California Hospital Association, California Medical Association, California Association of Nursing Homes, and the Southern California State Dental Association. By providing the Commission with a wide base composed of all these interested parties, it was hoped, as indeed has proved to be the case, to avoid intramural duplications, misunderstandings and the working at cross-purposes which had resulted in the downfall of many previous efforts. It was hoped also that placing the program on so wide a base would at once spread its benefits wider and avoid any purely local hindrances.

The first organizational meeting of the Commission was held February 21, 1961, in the meeting room of the California Medical Association building, San Francisco. Soon afterward it set about finding quarters and personnel. Money to inaugurate the program was obtained on loan from the Crocker-Anglo Bank, with the California Medical Association and the California Hospital Association acting as co-signers for four-fifths and one-fifth of the amount respectively. Then there were manuals to be formulated and surveying procedures to be worked before the actual surveying of facilities could start. By September 8, 1961, most problems seemed in hand and the chairman of the Joint Commission, Pierre Salmon, M.D., announced to interested facilities that the accreditation program was in operation and ready to accept applications.

It was evident that almost all facilities that applied early for accreditation were outstanding in their level of operation and were being managed by persons with a sense of responsibility and a feeling of confidence that they would be certified without difficulty. As time went on, however, there was an increase in the number of rejections as more facilities applied. As of May 31, 1962, 96 applications had been received by the Commission. Eighty-five facilities had been surveyed, of which 69, having 3,502 beds, had been granted full accreditation.

After the surveys had been under way for a time, changes in procedure and some revision and altered interpretation of the evaluation forms became necessary in the light of experience. By April, 1962, the Commission felt that it had gained sufficient knowledge to undertake a complete review of its standards, the better to tailor them to evaluating the long-term care facility. This review is still in progress. No doubt as the program continues to develop, further reviews and modifications will be indicated. It has also been necessary to revise some of the instructions to surveyors and make changes in the surveyors' manuals as experience has dictated.

The Commission evaluates a facility only upon request of the management. When it receives such a request, it first sends to the applicant information about the standards set forth by the Commission. Then within a reasonable time, by appointment, a surveyor calls. His report is reviewed by the entire Commission, which then may grant either full accreditation if the facility meets all standards, or provisional accreditation if it finds certain temporary deficiencies, or may deny accreditation if its standards are not met. Full accreditation is for a period of two years, provisional accreditation for one year. The right of appeal is provided for in cases of adverse decision.

In its survey the Commission stresses all phases of operation, with accreditation granted to the facilities providing overall excellence. Newness of the structure is not a governing factor. Considering the long-term care type of patient to be dealt with, emphasis is placed on superior nursing, happy, convenient and well-kept surroundings, programs for rehabilitation and recreation, and proper utilization of modern equipment and techniques. Requirements vary according to the type of facility: establishments registered as rest or boarding homes are not expected to offer the same services as those designated to provide skilled nursing care and more highly trained personnel.

Throughout the life of the Commission, it has been stressed that it is a voluntary organization set up to better the care of the chronically ill by helping the operators of private nursing homes or related facilities to improve the quality of care and the utilization of facilities. The Commission has no punitive function and no connection with any government body, but it is sometimes difficult to convince some of the more suspicious operators that the Commission's surveys are solely to help the facility attain higher standards. As the program continues to develop, its goals should become more obvious. Excellence is rewarded by the certificate of accreditation. It is the purpose of the Commission to show others how they may improve to reach the high standards which the certificate proclaims, and which it believes are necessary if the long-term patient is to get the kind of care of which we can be proud.

Generally, the Commission has been satisfied with the response to its program. As with any new endeavor, there has been some confusion and misinterpretation. The institution of the Medical Aid for the Aged Program caused certain complications, primarily because it was not immediately made clear what the requirements for participation in that program would be. This problem has now been settled.

The Commission plans to be self-supporting and to defray its expenses by making a charge for surveys. At present, pending actual cost experience, it is charging a flat fee of sixty dollars plus two and a half dollars for each licensed bed. While the charge may have deterred requests for surveys in some instances, it is probable that as the worth of the accreditation program becomes more apparent, more facilities may be expected to feel that this expense is justified.

Much of the potential value of the accreditation program has yet to be realized. As the superior facilities are recognized in increasing numbers, sheer economics will require that the sub-standard facility improve itself to survive.

Insurance covering long-term hospital care has long been a need, but insurance carriers have never had any means whereby they could assure themselves that the type of care to be provided would justify the cost. Conformance to a set of standards such as those set by the California Commission for the Accreditation of Nursing Homes and Related Facilities will assure both patient and insurance company that the accredited facility is giving them their money's worth. Already, certification of the acute general hospital by the Joint Commission on Accreditation of Hospitals has proven to be a reliable aid to insurance carriers seeking to obtain superior care for their policyholders. Carriers are now showing interest in the chronic care facility accreditation program.

The Commission's program will provide the medical profession with a yardstick which it can use in its quest for better patient care in chronic or custodial care institutions. Accreditation by the California Commission for the Accreditation of Nursing Homes and Related Facilities represents careful examination by a group of persons who are conversant in the fields of medical, dental, hospital, and nursing home care. The program is deserving of the full support of county medical societies and of individual physicians.

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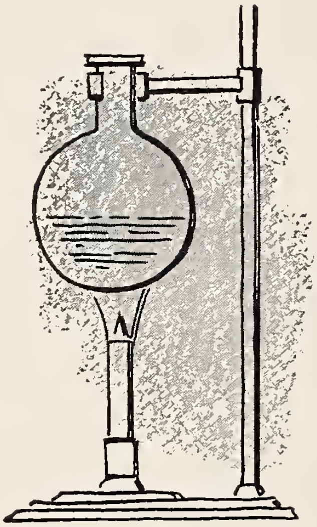

CASE REPORTS

Dental Infection Producing Severe Chronic Headache Simulating Brain Tumor

HOWARD R. BIERMAN, *M.D.*, and
JOSEPH TASHMA, *D.D.S.*, Beverly Hills

THE PRECISE CAUSE of severe headache in a given case is often obscure and despite exhaustive studies the eventual solution may be elusive and frustrating. Such difficult problems are therefore of interest to all physicians who may in the future encounter similar conditions.

REPORT OF A CASE

A 50-year-old Caucasian housewife was first seen in consultation on February 2, 1955, with the chief complaint of severe right temporal headache of ten years' duration. She was in hospital at the time.

When the headaches first began they were severe, intermittent and right-sided. Since they were particularly severe during the winter they were attributed to sinus infection. Despite repeated examinations and many forms of symptomatic therapy during the next seven years the headaches increased in frequency and severity. At the time the patient was seen in consultation they had been practically continuous for three years. The typical headache started in the right temporal region and radiated upward, first to the vertex and then throughout the entire upper right side of the head. The pain was unusually sharp, lancinating and unrelenting throughout the day and was often worse at night. There was no pain radiation below the zygoma, to the mouth, to the base of the skull or the neck. At last they became so severe that they were accompanied by nausea and vomiting.

The patient was put in hospital for three weeks in 1952 and a diagnosis of migraine headache was made, presumably on an allergic basis. She improved during that hospital stay, and after her discharge tests were carried out for allergic sensitivity. She was stated to be sensitive to tomatoes, pineapple, bananas and lobster.

However, even though she avoided these foods religiously her headaches became progressively more severe. Although at first they were regularly relieved by codeine, similar analgesics and subsequently narcotics had progressively less effect. On admission, the patient was taking 0.06 gm. (one grain) of codeine every three or four hours with transient relief, and had become addicted. She had threatened suicide as the pain became increasingly severe and more frequent.

Thorough dental examination including roentgenography in 1954 revealed no abnormalities. Roentgenographic examination of the cranial sinuses had been carried out a few weeks before she was admitted to hospital and the patient had been told they were infected. The sinuses were "washed with pressure" through the nose, the patient said, "using penicillin." She then received terramycin and sulfonamides, to which she had a skin reaction, and the medication was stopped after two days.

The patient had had a change of eye-glasses eight months before the consultation. Hearing had remained intact bilaterally. No history of trauma, stiffness of the neck, vertigo or pertinent previous illness could be elicited. Diagnosis upon referral was cephalalgia, cause undetermined; possible brain tumor.

On physical examination no visual defects were noted. On ophthalmoscopic examination the disc margins were observed to be sharp; no papilledema, vascular spasm, retinal change or other abnormality was seen. No evidence of gingival or dental disease was noted on examination of the month. The remaining teeth showed extensive restorations.

Percussion of the teeth produced no reaction; no "trigger zones" could be identified. The heart and lungs were found to be within normal limits. There were two well healed incisional scars on the abdomen, the sites of appendectomy and hysterectomy at the age of 29, and of nephropexy. Questioning elicited that ice water often relieved the pain more effectively than codeine.

Leukocytes numbered 8,800 per cu. mm. of blood, with the cell differential within a normal range. The hematocrit was 44 per cent; chemical components of the blood (per 100 ml. of plasma) were: glucose, 100 mg.; non-protein nitrogen, 39 mg.; total proteins, 5.6 gm., albumin 3.1 gm., globulin 2.5 gm.; cholesterol, 159 mg.

The spinal fluid was clear and colorless, and the initial pressure was 180 mm. (water). The protein content was 9.8 mg. per 100 ml.; the cell count: one mononuclear. Results of blood and spinal fluid tests were negative for syphilis. The specific gravity of the urine was 1.012; the pH, 6.0. There was no reaction for albumin or sugar. Results of microscopic

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From the Institute for Cancer and Blood Research, Beverly Hills.
Submitted May 14, 1962.

examination of the urine were: leukocytes, 1 to 3 per high-power field; epithelial cells +++; crystals +; occasional mucus threads.

X-ray films of the skull, paranasal sinuses and chest revealed no evidence of disease. A special x-ray examination of the teeth showed extensive carious involvement of the pulp of the right maxillary second bicuspid with inflammatory signs in the peri-apical bone indicating some elongation of the tooth, as well as osteolysis of the bone (Figure 1). The lamina dura or bony lining of the socket showed definite sclerosis around the peri-apical infection. Additional films showed highly sclerotic secondary dentin under the gold inlay of the second bicuspid and the second molar, indicating a chronic carious process.

Both the right maxillary second bicuspid and the second molar were extracted, and the patient said that she felt no pain during the extraction. Immediately thereafter, the headaches ceased and did not recur. The use of codeine and other analgesics was discontinued. At last report the patient had been free of headache for some four years.

DISCUSSION

Pain or swelling about the face or skull of undetermined origin is often caused by pulpal infection of a tooth.[1] Roentgenographic changes in the peri-apical bone may not be apparent and serious intracranial conditions are often considered. The extent of peri-apical destruction of bone depends upon the virulence, the duration and the extent of the infection.[2] Repeated or continuous paroxysms of pain with a concurrent prolonged sense of fullness may occur in chronic hyperemia or pulpitis.

Chronic pulp infection caused by low virulent pyogenic organisms may cause tissue changes so slowly and gradually that recognizable symptoms do not appear for a considerable time. During this period the tooth generally remains vital and only by exceedingly careful and exhaustive tests, including heat and electric methods, can this condition be detected. Occasionally the patient may remember that the tooth had ached at times before being filled or that the process of filling was attended by a great deal of pain which might indicate deep caries and incipient pulp involvement. Sometimes the patient remembers the dentist was not able to remove all the decay and "had to cap it." In such teeth the pulp is often diseased and necrotic. Dental pain is usually more severe at night. Pressure during mastication is variably painful. Foods or liquids hotter than 43° C. may cause exacerbations of pain while cold substances often provide relief, presumably due to vascular constriction. The origin of referred pain is commonly obscure and may be localized in or about the tooth or present in any part of the face supplied by the trigeminal or tympanic nerve (Figure 2).

The present case emphasizes the absolute necessity of adequate dental examination in medical problems where cranial symptoms, although not definitive, are persistent. When no cause can be found by medical examination of the usual extent, proper dental consultation should be sought. If the consultation proves negative, then further and more detailed medical studies can be initiated.

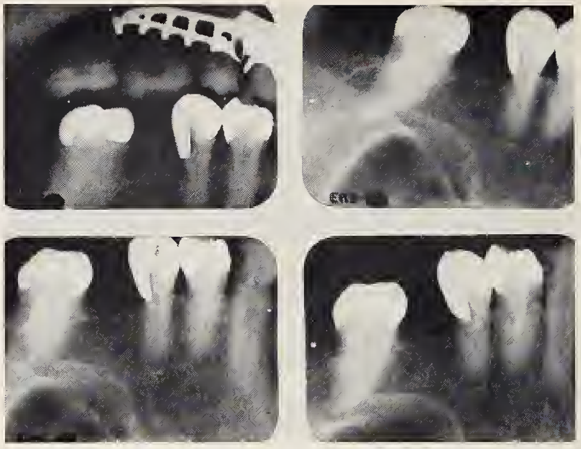

Figure 1.—X-ray films of the right maxillary area, showing peri-apical osteolysis about the second bicuspid. Note the sclerosis of the secondary dentin under the gold inlay of the second bicuspid and second molar.

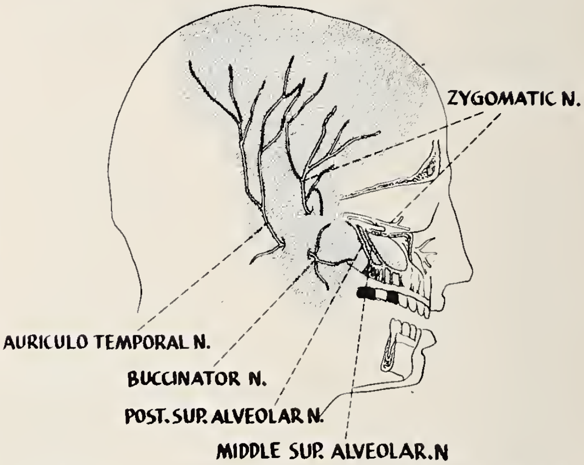

Figure 2.—Anatomical composite drawing of the area of pain radiation from the right maxillary second bicuspid and second molar.

SUMMARY

A 50-year-old housewife with severe right temporal headaches of ten years' duration had a presumptive diagnosis of brain tumor. The severity of the pain had driven the patient to codeine addiction and suicidal thoughts.

Studies pointed to a peri-apical infection of the right maxillary second bicuspid and molar, extraction of which was followed immediately by complete and permanent relief.

Institute for Cancer and Blood Research, 9200 West Olympic Boulevard, Beverly Hills (Bierman).

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EDITORIAL

Communications

"Communications" has become almost a magic word in business, professional and governmental circles in recent years. It has superseded earlier efforts at symbolizing the conveyance of information, attitude or program from one source to another.

In medical circles the term "public relations" was long employed. This was succinctly defined as doing or being good and then telling about it. Examples such as the elder Rockefeller distributing shiny dimes, or the elder Carnegie supplying funds for the construction of libraries bearing his name, were used as epitomizing "public relations." In both examples the subject was recalled as one who had made tremendous profits at public expense and then devoted his efforts to distributing his accumulation for the public good.

Out of this procedure the subject was referred to as "improving his public image." This phrase was Madison Avenue trade talk for creating a favorable atmosphere publicly in the hope that current goodness would counteract earlier public condemnation.

The medical profession, once highly revered and honored, found itself a quarter century ago placed in a defensive position by politicians bent on improving their own public images by distributing goodies to the people. In this instance, however, their benefits were not shiny dimes or new libraries purchased from their own pockets but services performed by physicians. The difference is noteworthy.

Placed in this defensive position, the medical profession turned to Madison Avenue and its equivalents in other cities, asking for help. From this opening request, the word "communications" and all that goes with it have come into being.

If we trace the history of the California Medical Association we find that the physicians in our state realized early in the depression days that they were about to be gobbled up by political demands that their services be dispensed under the control of the state. The physicians themselves would, under such a plan, have become pawns in the hands of the politicians.

This was a direct political move. The answer was to engage in counter political moves and out of this was born the Public Health League of California.

The demand for state compulsory health insurance was repeated in 1945, in 1947 and in 1949 in California. In our national capitol, a strong move in this direction developed in 1948. These were all in the form of specific legislative bills. Each demanded crash action and each was successfully opposed. Even so, the opposition offered was distasteful to many physicians and a demand was developed for a more subtle form of opposition under the direct control of physicians rather than gray flannel suited promoters.

Today the medical profession has become accustomed to the assumption of the care of certain segments of the population by various government agencies. In the state of California alone, 21 medical or health care programs are in operation by ten agencies of state. Government, at county, state and national levels, is in the business of providing health care for one group or another of the people. The aggregate encroachment on the private practice of medicine has assumed large proportions, even though each specific program may be miniscule by itself.

The insurance industry is another third party playing a prominent part in medical practice today. The Blue plans, Shield and Cross, are another entity.

While the profession has accepted these programs, albeit grudgingly, physicians have tended to establish their own philosophies and standards as to how each plan should be handled. Ask a question on the philosophy of dealing with one program in a group of ten physicians and you are likely to get ten answers.

Medical organizations, which carry the prestige and authority to deal effectively with various plan promoters, are now placed in the position of seeing their membership divided and their own authority curtailed in proportion to the variance in opinion. A single question a few years back—should physicians receive vendor payments from the state or should payment be made to the patient and he be given the responsibility of paying the doctor?—drew vociferous opinions for patient responsibility but an overwhelming vote for vendor payment.

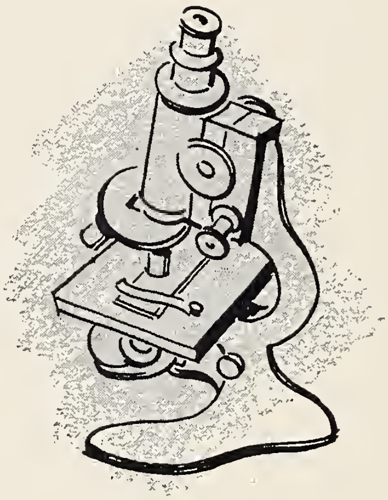
These considerations bring into sharp focus the vital need for communications. Decisions must be made at top level and then communicated to the membership. The members, in turn, must have available means for expressing their wishes. When members' wishes can be crystallized into an established method of procedure, the organizational officials are in a position to act.

The California Medical Association has adopted this concept of "communications." In brief, the word connotes a two-way street for the interchange of ideas, suggestions, plans, programs. Simultaneously, the same avenues of information must be kept open between officials and staff, between the state and the component societies, between committees and officials.

With such lines of communication open, the medical profession will be enabled to match the old public relations formula of being or doing good and telling about it.

The California Medical Association has now established its informational organization in a Bureau on Communications. The bureau is geared to prompt, proper and adequate procedures in assuring all interested parties of giving all others the opportunity to learn what is going on and why. The association has not attempted to hire outside professional firms, counting on them to transform the "image" of physicians into people on pedestals. Instead, it is establishing its own internal affairs and procedures into something alive, vibrant and workable.

The concept is new, the opportunities vast and the prognosis excellent.



California
MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 484th Meeting of the Council, San Francisco, Hilton Inn, September 29, 1962.

The meeting was called to order by Chairman Anderson in the Hilton Inn, San Francisco International Airport, on Saturday, September 29, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Todd, O'Neill, Bullock, O'Connor, Ham, Rogers, Cosentino, Grunigen, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson and Dozier.

Absent for cause, President-Elect Sherman, Councilors Wilson and Quinn.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Marvin, Whelan, Clark, Klutch, Edwards and Bowman, Doctor Miller and Mrs. Griffith of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Eugene Salisbury of the Public Health League; county executives Lingerfelt of Fresno, Geisert of Kern, Baker of Los Angeles, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson of San Joaquin, Wood of San Mateo, Grove of Monterey and Rosenthal of Forty First; Messrs. Heller, Nyron and Paolini and Doctor T. Eric Reynolds of California Physicians' Service; Messrs. John Pompelli and Dick Philleo of the American Medical Association; Dean Mellinkoff and Associate Dean Field of University of California, Los Angeles, School of Medicine; Doctor Malcolm Merrill, director of the State Department of Public Health; Doctor Daniel Blain, State Director of Mental Hygiene; Mrs. Eunice Evans of the State Department of Social Welfare; Doctor Donald Abbott of the State Board of Medical Examiners; Doctor Joseph Shebl, president of the Monterey County Medical Society; Doctor Gerald W. Shaw, and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 483rd Council meeting, held August 25, 1962, were approved.

2. *Membership:*

(a) A report of membership as of September 26, 1962, was presented and ordered filed.

(b) On motion duly made and seconded in each instance, 12 applicants were voted Associate Membership. These were: Philip Geller, Arthur Gropper, John P. Meehan, Jr., Paul F. Wehrle, Los Angeles County; William Clover, Ethel A. Chapman, Salvador A. Macis, San Bernardino County; Gilbert M. Clarke, Robert R. Eggen, Robert N. Hamburger, James W. Turpin, San Diego County; Carl T. Dupuy, San Luis Obispo County.

(c) On motion duly made and seconded, Doctor W. H. Johnston of Santa Barbara County was elected to Retired Membership.

(d) On motion duly made and seconded, 11 members were granted reductions of dues because of illness or postgraduate study.

(e) On motion duly made and seconded, Doctor Emmett L. Tisinger of San Bernardino County was voted reinstatement of his membership for 1960 and 1961 in order to clarify his membership records.

OMER W. WHEELER, M.D. . . . . President
SAMUEL R. SHERMAN, M.D. . . . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
IVAN C. HERON, M.D. . . . . Vice-Speaker
CARL E. ANDERSON, M.D. . . . Chairman of the Council
BURT L. DAVIS, M.D. . . . Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . . . . Secretary
DWIGHT L. WILBUR, M.D. . . . . Editor
HOWARD HASSARD . . . . Executive Director
JOHN HUNTON . . . . Executive Secretary
General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400
ED CLANCY . . . . . . Director of Public Relations
Southern California Office:
1515 N. Vermont Avenue, Los Angeles 27 • 663-8071

3. *State Fee Schedules:*

Discussion was held on the progress of conferences with representatives of the State Department of Finance on the level of medical fees allowed by various departments administering medical care programs.

Councilor Bullock offered the following motion:

> *Resolved:* That we recommend to the State that all physicians be allowed to charge their usual and normal fee for services to this group and that in case funds available for this year be exhausted, that we will recommend to all of our members that their patients be treated without charge for the remainder of the year.

The motion was lost for want of a second.

On motion duly made and seconded, it was voted to authorize the Committee for Emergency Action, in discussions with the State Department of Finance, to (1) reaffirm that the C.M.A. cannot bind any physician to participation in state financed medical care programs, and (2) state that any schedule of fees should be based upon a Relative Value factor that would represent a level acceptable to the majority of the state's physicians.

4. *Report of the President:*

President Wheeler reported on the fall board meeting of the Woman's Auxiliary. He also reported that the Santa Barbara County plan to handle welfare medical care programs through underwriting by California Physicians' Service had been approved and would go into effect in a few weeks.

Doctor Wheeler also called attention to a Congress on Mental Health scheduled by the American Medical Association, at which representatives of the C.M.A. would be present.

5. *Finance Committee:*

(a) Chairman Davis of the Finance Committee reported the recommendation of the committee that county society public relations programs, which seek C.M.A. financial support, should be considered on their individual merit and should first be presented to the Bureau on Communications and, if bureau approval is achieved, be presented to the council and thence to the Finance Committee. This recommendation was approved.

(b) The committee recommended that an ad hoc committee to study Mr. James Bryan's communications study should be considered a Council committee and not be given a budget appropriation.

(c) The committee recommended and the Council approved, on motion duly made and seconded, that all Alternate Delegates to the A.M.A. should attend the Los Angeles session of the A.M.A. and be allowed per diem expenses.

(d) The committee recommended that allocations of $500 for a committee on the medical aspects of sports, $2,500 for ad hoc committee #1 of the House of Delegates, and $1,200 for ad hoc committee #2 of the House of Delegates be provided to cover committee costs. On motion duly made and seconded, these appropriations were approved.

(e) The committee recommended that the budget be studied and approved by the Council sufficiently early to permit it to be mailed out in condensed form to all delegates and alternates one month before the annual meeting and that the finance reference committee be appointed at an early time so that those delegates having comments or inquiries about the proposed budget could relay these to the reference committee in advance of the annual session.

(f) The committee recommended and the Council, on motion duly made and seconded, approved a plan to provide for deferred compensation for the Executive Director, details of which will be approved by the Finance Committee.

6. *Medical Schools:*

(a) Dean Mellinkoff of U.C.L.A. School of Medicine and Associate Dean Field were introduced to the Council and reported their wish to continue liaison with the Association.

(b) Councilor Watts, Associate Dean of the University of California School of Medicine, San Francisco, requested the support of the Association for Proposition 1-A on the November ballot. This proposal has been referred to the Committee on Legislation.

7. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reported that allocations of state and federal funds for hospital construction had been approved for a $45 million building program and that reports of the northern and southern hospital planning committees are close to completion.

Doctor Merrill also gave progress reports on studies into glue-sniffing by minors, use of chemicals in foods and polio immunization programs. He also reported a regulation adopted to prohibit the sale or transportation of pet skunks because of the rabies hazard. He also reported that the Hoxsie treatment for cancer had been declared a misdemeanor.

8. *State Department of Mental Hygiene:*

Doctor Daniel Blain, state Director of Mental Hygiene, reported that his department believes that research is the answer to irreversible cases of brain damage and that the department is concerned over the curtailment of drugs used in treating mental cases. Doctor Blain also reported that progress is being made in the coverage of mental conditions by health insurance and that enlargement in this field will permit more patients to receive treatment under private auspices.

Doctor Blain also reported that within a special Committee on Insanity, which includes physicians, there has developed a sharp difference of opinion between himself and another physician and that this difference may soon emerge before the public.

9. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reported that the department was looking forward to the Santa Barbara County program of underwriting welfare medical care programs through California Physicians' Service as a valuable pilot program.

Mrs. Evans also reported that legislation adopted by the Congress had permitted the provision of care for some mental patients, a group previously not eligible for such care.

10. *State Board of Medical Examiners:*

Doctor Donald Abbott, member of the State Board of Medical Examiners, reviewed the history of medical licensure in California and assured the Council of the board's desire to maintain liaison with the C.M.A.

11. *California Physicians' Service:*

Doctor John Morrison reported that C.P.S. has developed its new MD-65 program and, in southern areas, will provide the complete service because of inability to reach an agreement with Blue Cross. The program is being widely advertised at this time.

Doctor Morrison read to the Council a letter which C.P.S. proposed to send to all Congressional candidates, outlining this program and indicating the availability of medical care to older citizens. On motion duly made and seconded, this mailing was approved.

Doctor Morrison also reported the death of Mr. Martin Webb, C.P.S. controller, and suggested that the Council adjourn the meeting in his memory.

12. *Delegation to American Medical Association:*

Doctor Wilbur, chairman of the A.M.A. delegation, suggested that the Delegates to the A.M.A. be invited to meet with the Council at its next meeting, in order to discuss items which might be presented to the A.M.A. House of Delegates in November. On motion duly made and seconded, it was voted to extend this invitation.

13. *Ad Hoc Committee on Scientific Board:*

Doctor Wilbur presented a list of some medical specialty organizations proposed for recognition for appointment of members of the Scientific Board. On motion duly made and seconded, this list was approved, subject to further additions. This list reads:

1. California Society of Anesthesiologists, Inc.
2. California Academy of General Practice
3. American College of Surgeons
    a. Northern California Chapter
    b. Southern California Chapter
4. American College of Obstetricians & Gynecologists, California Chapter
5. Western Orthopedic Association
    a. Northern California Chapter (Fresno North)
    b. Los Angeles Chapter (below Fresno-Newport Beach)
    c. San Diego Chapter (below Newport Beach to border)
6. California Society of Pathology
7. American Academy of Pediatrics (State of California Chapter)
8. a. Northern California Society of Physical Medicine & Rehabilitation
    b. Southern California Society of Physical Medicine & Rehabilitation
9. American Psychiatric Association
    a. Northern California Chapter
    b. Central California Chapter
    c. Southern California Chapter
10. The California Radiological Society
11. American College of Physicians
    a. Northern California Region
    b. Southern California Region
12. International College of Surgeons
    a. Northern California Chapter
    b. Southern California Chapter
13. California Academy of Preventive Medicine
14. American Urological Association, Western Section

14. *Bureau on Communications:*

On motion duly made and seconded, recommendation 33 in Mr. James Bryan's survey of communications, relative to employment of a director of communications, was voted approval.

15. *Proposition 22:*

Mr. Bob Garrick, campaign manager for the Committee on Medical Progress, working for an affirmative vote on Proposition 22, gave a progress report, announced that campaign material had been sent to all members and urged complete cooperation in behalf of this measure to complete the unification of the medical and osteopathic professions in California.

16. *Bureau of Research & Planning:*

Doctor Gerald Shaw, chairman of the Bureau of Research & Planning, gave a progress report on several studies now under way. He also reported that a report on medical care programs for elder citizens has been completed and that figures on premium costs are being compiled. On motion duly made and seconded, it was voted to approve distribution of this report when adequate premium data are available.

17. *Commission on Medical Services:*

Doctor John F. Murray reported that the Committee on Government Financed Medical Care was planning to seek the use of the 1960 Relative Value Studies in the Medicare program for military dependents. The committee is concerned, he reported, with its position relative to fees and its relationship with California Physicians' Service and its fee committee.

18. *Commission on Public Agencies:*

Doctor James C. MacLaggan, chairman of the Commission on Public Agencies, gave a progress report on the polio immunization programs staged in various areas of the state.

19. *Committee on Scientific Work:*

Doctor Albert C. Daniels, chairman of the Committee on Scientific Work, reported on plans made by the committee for the scientific program at the 1963 Annual Session. He also presented the recommendation of the committee that the Association refuse to accept technical exhibits by tobacco companies. It was pointed out that this prohibition would extend also to journal advertising. On motion duly made and seconded, it was voted to accept the committee's report with the exception of the recommendation on tobacco exhibits.

20. *Committee on Committees:*

(a) Doctor Wheeler recommended that Doctor Joseph P. Cosentino be appointed a member of the Committee on Committees. On motion duly made and seconded, this appointment was approved.

(b) Doctor Wheeler also recommended that a committee be appointed to review accreditation procedures for members of the Forty First Medical Society who have not had their specialty training recognized by the American Boards. On motion duly made and seconded, it was voted to appoint such a committee, with Doctor Wilbur to serve as the Council's representative and with consultants to be called as needed.

21. *Commission on Cancer:.*

Doctor Davis reported that the Commission's report on patient needs was being rewritten and would be presented at a later date.

22. *Association Mailing List:*

A request for use of the C.M.A. mailing list by a group of private colleges and universities was presented and a motion made to endorse the proposition but decline the use of the mailing list. On vote, this motion was lost.

Motion was made and seconded to grant the use of the mailing list for this purpose and, on vote, was lost. Doctor Bullock asked to be recorded as voting in favor of this motion.

23. *Time and Place of Next Meeting:*

The chairman announced that the next meeting of the Council would be held in Los Angeles on November 3, 1962.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:15 p.m. in the memory of Martin Webb.

Carl E. Anderson, M.D., *Chairman*
Matthew N. Hosmer, M.D., *Secretary*

1963
Annual Session

CALIFORNIA MEDICAL ASSOCIATION

March 23 to 27

AMBASSADOR HOTEL • LOS ANGELES

- - - - - - - - - - - - - -

GENERAL THEME:

Endocrinology and Inborn Errors of Metabolism

5 OUTSTANDING GUEST SPEAKERS:

STEFAN S. FAJANS, M.D., Professor of Internal Medicine, Division of Endocrinology and Metabolism, University of Michigan Medical Center, Ann Arbor.

MELVIN M. GRUMBACH, M.D., Associate Professor of Pediatrics, College of Physicians and Surgeons of Columbia University, New York.

GEORGE J. HAMWI, M.D., Professor of Medicine—Endocrinology, Director of Clinical Research Unit, Ohio State University Hospital, Columbus; and President of the Ohio State Medical Association.

JAMES D. HARDY, M.D., Professor and Chairman of the Department of Surgery; and Director of Surgical Research, Surgeon-in-Chief to the University Hospital, University of Mississippi Medical Center, Jackson.

CHARLES W. LLOYD, M.D., Senior Scientist; Director of the Training Program of Reproductive Physiology and Director of the Endocrine Research Clinic, Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts.

Symposium on the Adrenal Cortex

Symposium on the Pancreas

Panel on Diabetes

Problems of Gonadal Function

Spotlight on Medicine

Twenty-One Specialty Group Meetings

Basic Science Session

Fourteen Medical Motion Picture Symposia

Presidents' Dinner Dance—
Sunday, March 24—
Cocoanut Grove

House of Delegates—
Opening Session,
Saturday, 7:00 p.m., March 23;
Tuesday Afternoon, March 26,
and Wednesday, March 27

Cancer Conferences on
Pathology and Radiology—
Saturday, March 23

Registration Daily—
No Registration Fee

HOTEL RESERVATIONS—MAKE ALL HOTEL RESERVATIONS THROUGH C.M.A. HOUSING BUREAU—SEE PAGE 311.

In Memoriam

Bogen, Emil, Arcadia. Died September 19, 1962, in Burbank, aged 66, of heart disease. Graduate of the University of Cincinnati College of Medicine, 1923. Licensed in California in 1923. Doctor Bogen was a member of the Los Angeles County Medical Association.

✣

Goorwitch, Joseph, Los Angeles. Died October 1, 1962, in Los Angeles, aged 57. Graduate of Rush Medical College, Chicago, Illinois, 1935. Licensed in California in 1936. Doctor Goorwitch was a member of the Los Angeles County Medical Association.

✣

Hillyer, LeRoy, Los Banos. Died October 3, 1962, in Los Banos, aged 66, of heart disease. Graduate of the University of Texas Branch of Medicine, Galveston, 1922. Licensed in California in 1928. Doctor Hillyer was a member of the Merced County Medical Society.

✣

Jamentz, Samuel K., Pasadena. Died September 15, 1962, in Pasadena, aged 87, of metastatic adenocarcinoma to the liver, probably adenocarcinoma of sigmoid. Graduate of the University of Michigan Medical School, Ann Arbor, 1904. Licensed in California in 1921. Doctor Jamentz was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Johnson, Harold Stephen, Long Beach. Died September 22, 1962, in Long Beach, aged 64, of gastro-intestinal hemorrhage. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1926. Doctor Johnson was a member of the Los Angeles County Medical Association.

✣

Kern, Louis R., Los Angeles. Died October 5, 1962, in Los Angeles, aged 47. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1945. Licensed in California in 1946. Doctor Kern was a member of the Los Angeles County Medical Association.

✣

Kuh, Clifford, Oakland. Died September 15, 1962, in Oakland, aged 69. Graduate of Yale University School of Medicine, New Haven, Connecticut, 1932. Licensed in California in 1942. Doctor Kuh was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Morgan, John A., Modesto. Died September 30, 1962, in Modesto, aged 45. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1942. Licensed in California in 1942. Doctor Morgan was a member of the Stanislaus County Medical Society.

Morris, John Knox, Jr., Modesto. Died September 16, 1962, in Modesto, aged 65, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1924. Licensed in California in 1924. Doctor Morris was a member of the Stanislaus County Medical Society.

✣

Pyle, Wynand, Pasadena. Died October 2, 1962, in Pasadena, aged 74, of coronary occlusion. Graduate of Wayne University College of Medicine, Detroit, Michigan, 1915. Licensed in California in 1943. Doctor Pyle was a member of the Los Angeles County Medical Association.

✣

Ress, Irving Leroy, Beverly Hills. Died September 16, 1962, in Los Angeles, aged 58, of coronary occlusion. Graduate of Northwestern University Medical School, Chicago, Illinois, 1930. Licensed in California in 1931. Doctor Ress was a member of the Los Angeles County Medical Association.

✣

Thom, Wenonah King, Chico. Died September 27, 1962, aged 56, from multiple injuries received in an automobile crash. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1930. Licensed in California in 1930. Doctor Thom was a member of the Butte-Glenn Medical Society.

✣

Townsend, Guy Walter, Los Angeles. Died September 26, 1962, in Los Angeles, aged 73. Graduate of Creighton University School of Medicine, Omaha, 1910. Licensed in California in 1923. Doctor Townsend was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Turley, John G., Los Angeles. Died September 13, 1962, in Sawtell Veterans Hospital, aged 88. Graduate of Barnes Medical College, St. Louis, Missouri, 1899. Licensed in California in 1923. Doctor Turley was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Wynns, Harlin LeRoy, San Carlos. Died September 12, 1962, in San Carlos, aged 61. Graduate of University of California School of Medicine, Berkeley-San Francisco, 1929. Licensed in California in 1929. Doctor Wynns was a member of the San Mateo County Medical Society.

✣

Zumwalt, Fred H., San Francisco. Died September 16, 1962, in San Francisco, aged 82. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1902. Licensed in California in 1902. Doctor Zumwalt was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

APPLICATION FOR HOTEL ACCOMMODATIONS

92nd Annual Session

CALIFORNIA MEDICAL ASSOCIATION

March 23* to 27, 1963
LOS ANGELES

***House of Delegates Opening Session Saturday evening, March 23; Scientific Programs begin Sunday morning, March 24.**

INFORMATION

1. Please fill in the form below **completely** for room accommodations at the CMA's 1963 Annual Session. There is only a limited number of single rooms available. Your choice of accommodations will be better if your request is for rooms to be occupied by two or more persons.
2. Your reservation request should include the **definite date and hour** of your arrival and departure.
3. Reservations can only be held until 6:00 p.m.
4. **All reservations must be made through the CMA Housing Bureau, Dept. 34, 693 Sutter Street, San Francisco 2, California.**
5. **DEADLINE** for Housing—March 1, 1963.

HOTEL ROOM RATES†

	Single	Twin	Suites
AMBASSADOR HOTEL			
3400 Wilshire Boulevard			
Main Building	$14.00-$24.00	$18.00-$28.00	$40.00-$58.00
Garden Suites	$22.00-$34.00	$24.00-$36.00	$54.00-$66.00
CHAPMAN PARK HOTEL			
3405 Wilshire Boulevard			
Main Building	$10.00-$11.00	$15.00-$18.00	$20.00-$28.00
Bungalows (suites)			$28.00-$48.00
THE GAYLORD HOTEL			
3355 Wilshire Boulevard	$10.00-$12.00	$12.00-$15.00	$25.00-$35.00
HOTEL CHANCELLOR			
3191 West Seventh Street	$10.00	$12.00-$14.00	none
SHERATON-WEST			
2961 Wilshire Boulevard	$13.00-$20.00	$18.00-$25.00	$34.00

†The above quoted rates are subject to change.

CALIFORNIA MEDICAL ASSOCIATION—Housing Bureau, Dept. 34
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 92nd Annual Session of the California Medical Association, in Los Angeles, March 23-27, 1963. First meeting of the House of Delegates begins Saturday evening, March 23; Scientific Programs begin March 24.

Single Room $.................... Twin-Bedded Room $....................

Small Suite $.................... Large Suite $.................... Other Type of Room $....................

First Choice Hotel.................... Second Choice Hotel....................

ARRIVING AT HOTEL (Date):....................Hour:..........A.M..........P.M.

Leaving (date) ....Hour:..........A.M..........P.M.

Hotel reservations will be held until 6:00 p.m., unless otherwise notified.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names and addresses of both persons for each twin-bedded room requested; and names and addresses of all other persons for whom you are requesting reservations and who will occupy the rooms asked for:

....

....

....

....

Individual Requesting Reservations—Please print or type: Are you a CMA Officer?........A Delegate?........An Alternate?........

Name.................... County....................

Address.................... City and State....................

No. 13*

"Second Aid"

Many physicians consider rehabilitation a procedure to be done after most active treatment is completed. Although this is more or less true with regard to some modalities of physical and vocational rehabilitation, there is another aspect of the problem that should be emphasized.

Rapport and confidence between patient and physician are definite factors involved in recovery from injury or disease. A suddenly disabled workingman encounters many social and psychological problems along with his physical difficulties. If these are not resolved along with the treatment of the physical needs, maximum recovery may be delayed or complicated. With a little added effort, most of these situations can be controlled or relieved by the treating physician.

The most apparent social problems facing the disabled worker involve partial loss of income, concern over how much time he will lose from work, over his ultimate ability to return to usual employment and over job security. An early explanation to the patient of the nature of the condition, a realistic estimate of the length of disability and a conservative but encouraging prognosis regarding his final physical status will be of great assistance. A general description of the treatment procedures and evidence of a sincere interest in the patient's maximum recovery will reduce confusion and anxiety.

"Second Aid" of this kind should be started soon after the beginning of treatment. If the patient exhibits apprehension regarding progress or modalities of treatment, a prompt consultation may often obviate anxiety. If partial or total permanent disability that would prevent return to usual employment is foreseen, the physician should accept the responsibility for helping the patient to seek vocational guidance and rehabilitation as early as possible. If this is delayed, the patient's motivation is frequently lost. In some instances, an early return to modified duty is the best form of rehabilitation.

Committee on Occupational Health
California Medical Association

Comments and Questions Are Welcomed by the Committee

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*This is the thirteenth of a series of articles prepared by the Committee on Occupational Health.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

California is taking the lead in making direct use of water reclaimed from sewage, and developments are being closely observed throughout the nation.

Use of sewage effluent for irrigation of fodder crops has long been employed in the interior farming communities of California, and since 1947 San Francisco's famed Golden Gate Park has been irrigated with effluent.

In addition, seven golf courses in southern California use disinfected sewage effluent for spray irrigation, and similar plans are under study for Griffith Park in Los Angeles, and Balboa Park in San Diego.

The most dramatic of the current reclamation operations is that of the Santee County Water District in San Diego County. Sewage effluent which has received the normal elements of complete water treatment is percolated into the sands and gravels of a natural canyon, recaptured after a half mile of underground flow and formed into a chain of recreational lakes. These lakes, located at the entrance of a new community of some 20,000 people, form the center of an attractively landscaped recreational area for boating and fishing.

The criteria of success of these methods are: public health safety, acceptable chemical quality and hydraulic feasibility.

* * *

On September 1, California assumed regulatory authority over most radioactive materials in the state. This was the culmination of a long series of legislative and administrative steps which began with 1959 Congressional action that permitted transfer of regulatory authority from the Atomic Energy Commission to the states.

Some 1,000 organizations will be required to obtain radioactive material licenses from the State Health Department, and will be subject to inspection by state or local experts.

Radioactive materials have many beneficial uses in industry, medicine, research and education. The legislatively declared policy of California is to encourage such uses, while assuring that health and safety are not jeopardized.

* * *

The Bureau of Maternal and Child Health is exploring the feasibility of incorporating auditory screening of infants as a routine part of child health conferences.

Studies have indicated that recently developed auditory screening procedures for infants can be included in routine child health supervision at well child conferences and in the pediatrician's office. While such procedures are not designed to measure hearing acuity, they do serve to identify infants who fail to respond to selected auditory stimuli in a manner consistent with normal growth and development patterns.

Failure of a child to pass such screening tests may indicate the need for further otologic, audiologic, neurologic and psychological evaluations, thus permitting the application of appropriate therapy at an early age to obviate the development of more serious communicative disorders.

* * *

The U. S. Public Health Service maintains the national hospital for leprosy at Carville, La. This hospital is open to all patients with confirmed leprosy; no person with a confirmed case may be rejected, nor can a patient be held there against his will or denied readmission after once being admitted.

The present population of the hospital is over 300 patients, but only 67 of these are so acutely ill as to require infirmary care. The remainder are housed in dormitories, single apartments or apartments for married couples. All maintenance costs are assumed by the hospital. Many patients are provided with part-time employment in the hospital and some carry on private enterprises on the premises.

Treatment of acute cases involves use of the sulfone drugs, streptomycin, isoniazid and steroids. Chemotherapy results in severe systemic reactions in approximately 20 per cent of the cases treated.

An extensive program of rehabilitation is carried on using physical therapy, occupational therapy, appropriate prosthesis, along with continuous patient evaluation. Efforts are being made to restore more and more suitable patients to their homes by arranging occupational and social placement through liaison units and local social welfare departments.

However, many patients prefer to remain at Carville, not for medical indications but because of social and emotional inability to adjust to life in the home area. The present philosophy in handling cases is greatly hampered by lack of facilities for individual surveillance in many local areas. To date, California and Hawaii are the only states which provide for medical supervision of leprosy cases in their home communities.

WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

The Auxiliary and Politics

THE SCOPE of auxiliary programs covers many aspects of community service. If asked why we are concerned with such diverse projects, our answer would be: Assurance to the public that we are vitally interested in good government. We eagerly donate time and effort to causes that are related to the betterment of our community. Our interests are all keyed to helping others to help themselves. While in particular we are striving to keep medicine a free, unencumbered profession, that aim is a part of our wish to fulfill our moral obligation to those around us.

Medicine has been singled out as one of the first targets for socialization. It is incongruous that medicine should be selected, for no other profession can boast a comparable record of contribution to humanity. Its insistence that the health of the nation is paramount, may be one of the keys to its present problems. Because physicians always had an unselfish devotion to the welfare of their patients, they are reluctant to believe that government bureaucracy would question their ability to render the best medical care in the world. The events of the past few years, however, have brought them to a full realization of what some government officials have in mind for them. This has only served to unite them in a common effort to meet this threat. We in the Woman's Auxiliary are joining our forces with our husbands' to prove that we are not protecting selfish interests.

Since proponents of these government programs are trying to place medicine under their control, we have been forced into the political arena. It is not only from a medical standpoint that we oppose such government interference, but because it is a threat to all private enterprise. We are staunch supporters of constitutionalism and the rights of the individual.

We have just been through a crucial national election. Our government legislators have been selected and will be taking office in January. Are you happy with the results? Are your representatives imbued with a philosophy of constitutional government? Do they have a true sense of fiscal responsibility? Do they believe in our way of life based on individual freedom and free enterprise? If the answer to any of these questions is no, it could be our apathy and complacency that put such persons in office. Maybe our refusal to forget party lines helped in the election of men who are the antithesis of everything we expect from government. In retrospect, did we really respond wholeheartedly when called on to do pre-election campaigning? Maybe one more phone call, an extra hour spent in precinct work or a few hours spent on election day taking friends to the polls might have assured us that we would not be faced with Forand-type legislation in 1963.

Now that the decisions have been made, we must anticipate and prepare for the next two years. The administration has promised the reintroduction of a new medicare bill. It will probably be a revision of the King-Anderson bill, with concessions made on some points to help its passage, but maintaining the Social Security approach. We all have vast supplies of material for combating this legislation, although some of it may vary in minor details with any new bills presented in January. The next two months can be used profitably in continued education against any form of government medicine. We are sponsors of good medicine, regulated by persons best qualified—physicians. We disagree with those who would burden our future generations with an insurmountable tax load, to take care of us in later years, whether we need such help or not.

Most newly elected officials will remain in their respective districts for the next two months. If you have not already done so, it is urgent that you get acquainted with them. In some instances, they will be new to the field of politics, in others incumbent. They may not all agree with your point of view, but that should not preclude making your ideas known to them. They are responsible to you, their constituents, and they are politically alert enough to know they must consider your opinion when they are making their decisions. Let them know you are watching their voting record. Correspond with them frequently when they are away from home. Commend them when they take a stand supporting our ideals. Do not always ask for favors. Senator Byrd, Chairman of the Senate Finance Committee, has said, "The average citizen has power he seldom realizes. For one thing he has the power of the pen."

As women, we are members of the largest voting majority. We can sway public opinion and influence votes if we make full use of our potential. Being members of the Woman's Auxiliary to the California Medical Association, we have the added advantage of membership in the largest state auxiliary. This carries with it increased responsibilities. We should lead in action. The other states will be looking to us to set a precedent. Living up to this position will require the co-operation of each of our 7,000 members. If we do nothing more than fulfill our commitments to the California Medical Association, with the advice and assistance they have given us, we will be first in legislative matters.

Mrs. Robert J. Douds, *Chairman*
Committee on Legislation
Woman's Auxiliary to the C.M.A.

LETTERS *to the Editor*

Each member of the California Medical Association recently received a copy of the amended Official Minimum Medical Fee Schedule of the Industrial Accident Commission.

It should be called to the attention of the membership that this is, as stated in its title, a schedule of *minimum* fees. It does not preclude usual and customary charges by physicians, providing the insurance carrier is willing to pay normal fees for the medical services provided.

Edgar Rosen, M.D.
447 - 29th St.,
Oakland 9

Cancer Therapy—Evaluation of Supervoltage X-Ray

Doctor Lewis Jacobs' article, "Cancer Therapy—Evaluation of Supervoltage X-ray: A Review of the Literature" in the September 1962 issue of California Medicine, contains some statistical errors whose correction changes the implications of his review.

The article in question lists the results of a number of published studies of five-year survivorship under radiation therapy, plus the voltage used in each study, and tests the equality of the survival rates by chi-square. This is done separately for cancer of the tonsil and for cancer of the ovary, as examples of relatively accessible and relatively inaccessible sites. No significant variability in survival rates is found for either site.

The formula used for chi-square is in error. It should be multiplied by one less than the number of studies (16 for tonsil, 11 for ovary). This, plus the correction of minor arithmetic errors, leads to chi-squares of 69.97 (so significant that it isn't tabled) for tonsil and 24.75 (significant at the 1 per cent level) for ovary. This result is much less surprising than the published one, in view of the probable differences from study to study in age of patients, stage of cancer, selection criteria for radiation versus surgery, etc.

Having found such spectacular variations, and having some idea of the manifold uncontrolled factors which may be invoved, it is clear that further examination of the data can lead us at best to conjectures, which must ultimately be confirmed by more carefully controlled investigations.

The further examination should logically consist in deciding whether the observed variation is associated to any significant extent with variation in voltage. This can be done by calculating separate chi-squares for the variation (a) within the high voltage group, (b) within the other group (orthovoltage-not stated) and (c) between the high voltage and the other group. Since these represent all possible sources of variation, these chi squares add up to the overall chi square calculated above, except for round-off error. The results of these calculations are shown in the table.

	Tonsil		Ovary	
Source of Variation	χ^2	Significance	χ^2	Significance
Within high voltage....	5.27	No	1.14	No
Within other................	64.59	<1%	21.88	<1%
Between groups...........	.03	No	1.46	No
	69.97	<1%	24.75	<1%

For both sites, the significant variation occurs within the "other" group, not within the high voltage group or between the two groups. In other words, any significant difference which may exist between the high voltage group and the "other" group for either site is swamped by the extreme variability of the other group. Therefore the failure to find such a difference in these data is not a very strong reason to conclude that none exists. I think the verdict should be "not proved."

Sincerely,
William R. Gaffey, Ph.D.
Statistical Consultant, Divison of Research, State of California Department of Public Health

* * *

Dr. Jacobs' Reply

Thank you for letting me see Dr. Gaffey's criticism. I think that his last paragraph really agrees in all essential ways with my conclusion, since after all, you do not prove something is so by proving that it is not "not so." If he prefers to consider this "not proved" I have no objection.

Sincerely,
Lewis G. Jacobs, M.D.

INFORMATION

Characteristics of Physicians in California, Spring 1961

Highlights of a study being conducted by the Bureau of Research and Planning, California Medical Association

TWENTY-SIX PER CENT of all physicians in California as of the spring of 1961, including those working for hire as well as private practitioners, were in general practice whereas 44 per cent were full-time specialists.

- Of those engaged only in private practice, 32.2 per cent were in general practice, 63.8 per cent were in full-time specialties, and 4.0 per cent were in part-time specialties.
- Densely populated areas have considerably higher proportions of physicians in specialty fields than do sparsely populated areas.
- Among full-time specialties practiced by physicians (excluding those employed by the federal government), the following five fields engage over 60 per cent of all specialists: Internal Medicine, General Surgery, Psychiatry, Obstetrics-Gynecology, Pediatrics.
- Within private practice, the median age of full-time specialists (45.0 years) is below that of general practitioners (47.5 years). The average age of part-time specialists is 53.0 years.

The foregoing data are selected from a mass of information gathered by the C.M.A. Bureau of Research and Planning in the spring of 1961 for study of characteristics of physicians in California.

Phase One of the Bureau's study was analysis of information supplied in a deck of IBM cards containing selected characteristics of physicians in the state of California, which was made available by the American Medical Association. These cards supplied information on physician location, type of practice, specialty, age, school of graduation, and a variety of other data. Additional information about physician characteristics, to be made available as the study progresses, will be based on answers to a census questionnaire completed by almost 13,000 physician respondents in late 1961 and early 1962. These answers, combined with the basic characteristics already on cards, will provide the medical profession with a wealth of information about itself.

The tables in this article contain some basic facts about medical practice in California. Tables 1 and 2 show types of practice by county medical society jurisdiction; Table 1 includes all physicians in the state, and Table 2 includes only those physicians in private practice. Table 3 shows the medical specialty of nonfederal physicians, by type of practice. Table 4 contains an age distribution for nonfederal physicians, also by type of practice.

Table 1: Type of Practice by County Medical Society Jurisdiction, All Physicians

Table 1 shows the distribution of all 27,760 physicians who had California addresses as of spring, 1961. This array locates each physician geographically by county medical society jurisdiction, and further shows numbers and per cents within each society by type of practice. Type of practice categories are as follows: Private practice[1] (further broken down into general practice, which includes part-time specialty, and full-time specialty); hospital service (further broken down to distinguish interns and residents[2] from other full-time hospital staff members); a third major category which includes medical school staff members, medical administrators, nonfederal public health, physicians practicing dentistry, and physicians employed by industrial or insurance companies on a full-time basis; and a fourth category which includes all physicians who are retired or otherwise not engaged in any kind of medical practice.

In Table 1, physicians employed by the federal government (Veterans Administration, USPHS, and members of the armed forces) are interspersed according to the type of practice in which they are engaged.

Some interesting, if obvious, facts can be detected by analyzing Table 1. It is generally true that the percentage of general practitioners in an area is in inverse proportion to the density of the population of the area. Note that Inyo, Mono, Lassen, Plumas, Modoc, Sierra, San Benito, and Tehama counties all show per cents in general practice above 80 per cent. Conversely, low proportions of general practitioners are found in high-density population areas, particularly the San Francisco and Los Angeles Metropolitan Areas. A few counties defy this general rule due to the existence of high proportions of physicians in fields other than private practice.

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[1] Due to the coding system used by the A.M.A., some physicians in federal service are included in the "Private Practice" classification. Errors due to this coding inconsistency are negligible, however.

[2] See other tables for separate breakdown of interns and residents.

TABLE 1.—*Type of Practice of All Physicians in California, Spring 1961*

County Medical Society	Total Physicians	Private Practice				Hospital Service				Teaching, Administration, Research and Other		Not in Medical Practice	
		General Practice[1]		Full-Time Specialty		Intern, Resident		Other					
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Alameda-Contra Costa	2,387	655	27.4	1,014	42.5	269	11.3	192	8.1	120	5.0	137	5.7
Butte-Glenn	107	53	49.5	40	37.4	1	0.9	4	3.8	0	....	9	8.4
Fresno	412	128	31.1	188	45.6	49	11.9	22	5.3	6	1.5	19	4.6
Humboldt-Del Norte	106	61	57.5	33	31.1	0	....	2	1.9	2	1.9	8	7.6
Imperial	61	30	49.2	26	42.6	0	....	4	6.6	1	1.6	0	....
Inyo-Mono	12	10	83.3	2	16.7	0	....	0	....	0	....	0	....
Kern	307	116	37.8	126	41.0	31	10.1	14	4.6	6	1.9	14	4.6
Kings	40	31	77.5	4	10.0	9	7.5	2	5.0	0	....	0	....
Lassen[2]	33	27	84.9	1	3.0	0	....	4	9.1	0	....	1	3.0
Los Angeles	10,787	2,536	23.5	5,250	48.7	1,397	12.9	507	4.7	398	3.7	699	6.5
Madera	24	19	79.1	3	12.5	0	....	1	4.2	0	....	1	4.2
Marin	339	86	25.4	181	53.4	18	5.3	10	2.9	9	2.7	35	10.3
Mendocino-Lake	87	42	48.3	20	23.0	7	8.0	8	9.2	1	1.2	9	10.3
Merced-Mariposa	77	44	57.1	18	23.4	4	5.2	6	7.8	1	1.3	4	5.2
Monterey	308	102	33.1	118	38.3	13	4.2	19	6.2	7	2.3	49	15.9
Napa	164	36	22.0	41	25.0	3	1.8	64	39.0	3	1.8	17	10.4
Orange	912	286	31.3	442	48.5	49	5.4	30	3.3	11	1.2	94	10.3
Placer-Nevada	95	53	55.8	19	20.0	0	....	16	16.8	1	1.1	6	6.3
Riverside	393	131	33.3	167	42.5	20	5.1	12	3.1	7	1.8	56	14.2
Sacramento[3]	625	213	34.1	286	45.8	30	4.8	32	5.1	28	4.5	36	5.7
San Benito	13	12	92.3	1	7.7	0	....	0	....	0	....	0	....
San Bernardino	631	179	28.4	247	39.1	54	8.6	71	11.2	34	5.4	46	7.3
San Diego	1,734	508	29.3	675	38.9	171	9.8	140	8.1	29	1.7	211	12.2
San Francisco[4]	3,765	742	19.7	1,404	37.3	911	24.2	418	11.1	154	4.1	136	3.6
	(3,172)	(481)	(15.2)	(1,311)	(41.3)	(902)	(28.4)	(200)	(6.3)	(144)	(4.6)	(134)	(4.2)
San Joaquin[5]	336	124	36.9	122	36.3	43	12.8	28	8.3	7	2.1	12	3.6
San Luis Obispo	123	38	30.9	51	41.5	6	4.9	11	8.9	6	4.9	11	8.9
San Mateo	711	134	18.8	436	61.3	43	6.1	21	3.0	18	2.5	59	8.3
Santa Barbara	366	73	19.9	186	50.8	28	7.7	11	3.0	8	2.2	60	16.4
Santa Clara	1,369	262	19.1	641	46.8	205	15.0	78	5.7	79	5.8	104	7.6
Santa Cruz	142	59	41.6	54	38.0	3	2.1	1	0.7	2	1.4	23	16.2
Shasta-Trinity	76	36	47.4	34	44.7	1	1.3	3	4.0	0	....	2	2.6
Siskiyou	28	20	71.4	3	10.7	0	....	2	7.2	0	....	3	10.7
Solano	183	65	35.5	61	33.3	5	2.7	36	19.7	8	4.4	8	4.4
Sonoma	245	96	39.2	86	35.1	14	5.7	21	8.6	8	3.3	20	8.1
Stanislaus	202	81	40.1	85	42.1	12	5.9	13	6.4	2	1.0	9	4.5
Tehama	20	18	90.0	2	10.0	0	....	0	....	0	....	0	....
Tulare	155	76	49.0	49	31.6	5	3.2	14	9.0	1	0.7	10	6.5
Ventura	263	85	32.3	87	33.1	27	10.3	39	14.8	1	0.4	24	9.1
Yolo	49	25	51.0	18	36.7	0	....	3	6.1	1	2.1	2	4.1
Yuba-Sutter-Colusa	73	34	46.6	35	47.9	0	....	1	1.4	1	1.4	2	2.7
State Total[4]	27,760	7,326	26.4	12,256	44.1	3,422	12.3	1,860	6.7	960	3.5	1,936	7.0
	(27,167)	(7,065)	(26.0)	(12,163)	(44.8)	(3,413)	(12.6)	(1,642)	(6.0)	(950)	(3.5)	(1,934)	(7.1)

[1] Includes part-time specialty.

[2] Includes Plumas, Modoc and Sierra.

[3] Includes Amador and El Dorado.

[4] Figures in parentheses exclude personnel with APO and FPO addresses.

[5] Includes Calaveras, Alpine and Tuolumne.

This is true, for example, of Napa County, where many physicians are in hospital service and of Santa Barbara County, which shows a high proportion of retired physicians.

Above-average proportions of full-time specialists seem to relate to two factors: High population density and high incomes of the population. The relation to the former factor is evidenced in such counties as Los Angeles, Orange, Sacramento, and Santa Clara; the relation to the latter factor in such counties as Marin, San Mateo, and Santa Barbara.

High percentages of physicians in hospital service correlate with high population density, a fact which appears also to be true for physicians in teaching, research, administration, and other types of specialized fields.

Above-average proportions of retired physicians are found in those counties which are generally attractive to retired persons, such as for reasons of climate. Among these counties are Santa Barbara, Santa Cruz, Monterey, Riverside, and San Diego. This category includes physicians who have never practiced medicine in California.

The category "other hospital service" is composed entirely of full-time salaried hospital staff members. Napa County shows the greatest per cent of physicians in this classification due to the employment of physicians at Napa State Hospital and at Veterans' Home—a large number in relation to total physicians in the county. This is also true of Placer County, the site of both the Weimar Medical Center (tuberculosis) and DeWitt State Hospital (psychiatric) and of Ventura County, the location of Camarillo State Hospital. Solano County shows a high percentage in this group because of the large hospital at Travis Air Force Base. The last county showing over 10 per cent employed in hospitals is San Bernardino; most of this group are staff members at Patton State Hospital.

TABLE 2.—*Type of Practice of Physicians in Private Practice, Spring 1961*

County Medical Society Jurisdiction	Total Physicians	General Practice		Full-Time Specialty		Part-Time Specialty	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
Alameda-Contra Costa	1,591	559	35.1	973	61.2	59	3.7
Butte-Glenn	93	50	53.8	40	43.0	3	3.2
Fresno	312	112	35.9	187	59.9	13	4.2
Humboldt-Del Norte	94	50	53.2	33	36.1	11	10.7
Imperial	52	24	46.2	26	50.0	2	3.8
Inyo-Mono	11	9	81.8	2	18.2	....	....
Kern	230	95	41.3	121	52.6	14	6.1
Kings	35	28	80.0	4	11.4	3	8.6
Lassen-Plumas-Modoc-Sierra	28	24	85.7	1	3.6	3	10.7
Los Angeles	7,577	2,135	28.2	5,132	67.7	310	4.1
Madera	22	18	81.8	3	13.6	1	4.6
Marin	246	64	26.0	172	69.9	10	4.1
Mendocino-Lake	61	36	59.0	20	32.8	5	8.2
Merced-Mariposa	53	32	60.4	16	30.2	5	9.4
Monterey	193	68	35.2	109	56.5	16	8.3
Napa	76	31	36.0	41	59.3	4	4.7
Orange	693	241	34.8	424	61.2	28	4.0
Placer-Nevada	70	49	70.0	17	24.3	4	5.7
Riverside	279	110	39.4	155	56.6	14	4.0
Sacramento-Amador-El Dorado	488	195	40.0	276	57.6	17	2.4
San Benito	13	11	84.6	1	7.7	1	7.7
San Bernardino	404	157	38.9	233	57.7	14	3.4
San Diego	1,028	383	37.3	611	59.4	34	3.3
San Francisco	1,722	387	22.5	1,270	73.8	65	3.7
San Joaquin-Alpine-Calaveras-Tuolumne	245	113	46.1	122	49.8	10	4.1
San Luis Obispo	88	36	40.9	51	58.0	1	1.1
San Mateo	560	120	21.4	430	76.8	10	1.8
Santa Barbara	245	62	25.3	177	72.2	6	2.5
Santa Clara	880	216	24.5	631	71.7	33	3.8
Santa Cruz	110	48	43.6	53	48.2	9	8.2
Shasta-Trinity	70	33	47.1	34	48.6	3	4.3
Siskiyou	23	19	82.6	3	13.0	1	4.4
Solano	107	53	49.5	51	47.7	3	2.8
Sonoma	177	92	52.0	84	47.5	1	0.5
Stanislaus	164	73	44.5	84	51.2	7	4.3
Tehama	20	17	85.0	2	10.0	1	5.0
Tulare	123	65	52.8	48	39.0	10	8.2
Ventura	159	67	42.1	85	53.5	7	4.4
Yolo	43	22	51.2	18	41.9	3	6.9
Yuba-Sutter-Colusa	59	26	44.1	31	52.5	2	3.4
State total	18,444	5,930	32.2	11,771	63.8	743	4.0

Table 2: Type of Practice of Physicians in Private Practice

The breakdown of physicians shown in Table 2 further delineates information contained in Table 1. This tables enumerates only those physicians who are actively engaged in private practice. These 18,444 general practitioners, full-time specialists, and part-time specialists comprise slightly more than 70 per cent of all physicians with California addresses. Among private practitioners only, 63.8 per cent are full-time specialists, 32.2 per cent are in general practice, and 4.0 per cent are part-time specialists.

The variations shown in percentages among spe-

TABLE 3.—*Nonfederal Practicing Physicians*[1]:

Specialty	All Nonfederal Physicians Number	All Nonfederal Physicians Per Cent	Physicians in Private Practice Number	Physicians in Private Practice Per Cent	General Practice Number	Full-Time Specialty Number	Part-Time Specialty Number
Allergy	74	0.3	68	0.4	....	59	9
Aviation Medicine	13	0.1	4	*	....	1	3
Anesthesiology	877	3.8	719	3.9	....	670	49
Cardiovascular	123	0.5	81	0.4	....	71	10
Dermatology	367	1.6	327	1.8	....	316	11
Gastroenterology	32	0.1	23	0.1	....	20	3
General Practice	7,264	31.2	5,931	32.2	5,931	....	....
Internal Medicine	3,049	13.1	2,409	13.1	....	2,409	....
Medical Administration	35	0.2	1	*	....	1	....
Neurology	61	0.3	36	0.2	....	32	4
Neurosurgery	178	0.8	138	0.7	....	136	2
Obstetrics-Gynecology	1,469	6.3	1,262	6.8	....	1,160	102
Ophthalmology	893	3.8	813	4.4	....	790	23
Orthopedic Surgery	740	3.2	632	3.4	....	618	14
Otolaryngology	369	1.6	340	1.8	....	336	4
Occupational Medicine	180	0.8	118	0.6	....	79	39
Pathology	514	2.2	235	1.3	....	224	11
Pediatrics	1,289	5.5	1,030	5.6	....	968	62
Physical Medicine and Rehabilitation	48	0.2	29	0.2	....	27	2
Plastic Surgery	107	0.5	99	0.5	....	98	1
Psychiatry	1,529	6.6	1,030	5.6	....	978	52
Proctology	104	0.5	102	0.6	....	88	14
Pulmonary Disease	119	0.5	73	0.4	....	55	18
Public Health	206	0.9	2	*	....	2	....
Radiology	813	3.5	575	3.2	....	563	12
Surgery (General)	2,260	9.7	1,847	10.0	....	1,561	286
Thoracic Surgery	144	0.6	120	0.7	....	120	....
Urology	458	2.0	400	2.2	....	389	11
State total	23,315	100.0	18,444	100.0	5,931	11,771	742

[1] Excludes Retired (1,382) and Not in Practice (336).

[2] Includes nonfederal public health, dentists, and employees of insurance or industrial companies.

[3] Includes all interns who have not designated a specialty.

TABLE 4.—*Age Distribution and Median Age of*

Age	Total Physicians Number	Total Physicians Per Cent	General Practice Number	General Practice Per Cent	Full-Time Specialty Number	Full-Time Specialty Per Cent	Part-Time Specialty Number	Part-Time Specialty Per Cent	Intern Number	Intern Per Cent	Resident Number	Resident Per Cent
Under 30	1,390	5.5	94	1.6	16	0.1	....	....	574	74.8	675	30.0
30 to 34	2,729	11.0	524	8.9	736	6.2	34	4.5	164	21.3	1,095	48.9
35 to 39	4,559	18.2	959	16.1	2,745	23.4	88	11.9	24	3.2	306	13.7
40 to 44	3,916	15.7	947	16.0	2,403	20.4	95	12.8	4	0.5	99	4.4
45 to 49	3,362	13.4	855	14.4	2,097	18.0	91	12.2	2	0.2	48	2.1
50 to 54	2,596	10.3	766	13.0	1,450	12.3	104	14.0	....	....	11	0.5
55 to 59	1,852	7.4	551	9.3	952	8.1	88	11.9	....	....	9	0.4
60 to 64	1,439	5.8	429	7.2	656	5.5	78	10.5	....	....	....	....
65 to 69	1,125	4.5	304	5.1	422	3.6	65	8.7	....	....	....	....
70 to 74	762	3.0	214	3.6	172	1.4	39	5.2	....	....	....	....
75 and over	1,303	5.2	287	4.8	122	1.0	61	8.2	....	....	....	....
Total	25,033	100.0	5,930	100.0	11,771	100.0	743	100.0	768	100.0	2,243	100.0
Median age	44.8		47.5		45.0		53.0		[2]		32.0	

[1] Includes nonfederal public health, dentists, insurance company and industrial employees.

[2] Unable to compute median age.

cialists and general practitioners are to a great extent the same as those explained earlier in connection with Table 1. Shown separately in Table 2, however, are part-time specialists who were combined with general practitioners in Table 1. This separation alone alters the percentage relationship. Per cent differences are somewhat accentuated in Table 2 due to the exclusion of physicians not in private practice. These cases are most apparent in counties which showed high proportions not in private practice in Table 1. Outstanding among these cases are Los Angeles, San Francisco and Santa Clara counties, all of which show high proportions of interns and residents, Napa County, which shows a high

pe of Practice by Specialty, Spring 1961

Physicians Not in Private Practice		Intern	Resident	Other Hospital Services	Full-Time Medical School	Medical Administration	Research	Other[2]
Number	Per Cent	Number	Number	Number	Number	Number	Number	Number
6	0.1	....	3	3	....	....	....	....
9	0.2	....	....	....	1	....	....	8
158	3.2	2	85	65	6	....	....	....
42	0.9	....	34	4	2	....	2	....
40	0.8	....	35	1	3	....	....	1
9	0.2	....	7	2	....	....	....	....
1,333	27.4	752[3]	140	133	72	35	58	143
640	13.1	5	429	107	61	4	13	21
34	0.7	....	....	26	1	5	....	2
25	0.5	....	10	5	10	....	....	....
40	0.8	....	30	2	7	....	1	....
207	4.2	....	179	11	15	....	1	1
80	1.6	....	67	10	2	....	....	1
108	2.2	....	94	10	2	....	1	1
29	0.6	....	26	1	1	....	1	....
62	1.3	....	....	....	3	....	....	59
279	5.7	....	133	109	25	....	3	9
259	5.3	5	144	58	25	2	3	22
19	0.4	....	8	6	5	....	....	....
8	0.2	....	5	2	1	....	....	....
499	10.2	....	266	182	15	4	7	25
2	*	....	2	....	....	....	....	....
46	0.9	....	6	37	....	....	....	3
204	4.2	....	14	....	10	1	....	179
238	4.9	....	110	113	14	....	1	....
413	8.5	4	351	46	11	....	....	1
24	0.5	....	13	9	2	....	....	....
58	1.2	....	52	4	2	....	....	....
4,871	100.0	768	2,243	946	296	51	91	476

*Less than .05 of 1 per cent.
Note: Per cents may not add to 100 due to rounding.

lonfederal Physicians, by Type of Practice, Spring 1961

Hospital Service		Full-Time Medical School		Medical Administration		Research		Other[1]		Retired		Not in Practice	
Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
7	0.7	3	1.0	....	....	10	11.0	3	0.6	....	....	8	2.4
79	8.4	28	9.5	4	7.9	19	20.9	19	4.0	....	....	27	8.0
220	23.3	74	25.0	3	5.8	21	23.0	74	15.5	....	....	45	13.3
181	19.2	64	21.6	2	4.0	20	22.0	65	13.6	3	0.2	33	9.9
118	12.4	44	14.9	4	7.9	6	6.6	61	13.0	6	0.4	30	9.0
109	11.5	35	11.9	7	13.7	6	6.6	75	15.7	9	0.6	24	7.1
88	9.3	22	7.4	9	17.6	3	3.3	73	15.3	24	1.7	33	9.9
65	6.8	14	4.7	7	13.7	3	3.3	52	11.0	92	6.6	43	12.7
56	6.0	10	3.4	8	15.7	1	1.1	40	8.4	177	12.9	42	12.5
15	1.6	2	0.6	4	7.9	1	1.1	12	2.5	282	20.4	21	6.2
8	0.8	....	....	3	5.8	1	1.1	2	0.4	789	57.2	30	9.0
946	100.0	296	100.0	51	100.0	91	100.0	476	100.0	1,382	100.0	336	100.0
44.5		43.3		58.0		39.0		51.0		[2]		55.1	

proportion of physicians in hospital service, and Monterey, Riverside, Santa Barbara, and Santa Cruz Counties, which show an above-average per cent of retired physicians.

There is no apparent uniform pattern in the geographic distribution of physicians with part-time specialties. Only two county societies show more than 10 per cent of private practitioners in this category. Both of these societies are composed of basically rural counties, although in Humboldt County over 25 per cent of the population lives in the city of Eureka. Counties in the San Francisco-Oakland Metropolitan Area all show per cents of part-time specialists below the statewide average. Los Angeles and Orange Counties, however, show above-average percentages. It should be observed, in comparing these area figures to statewide averages, that 45 per cent of all private practitioners are in Los Angeles and Orange counties and that another 23 per cent are in the six-county San Francisco-Oakland Metropolitan Area.

Table 3: Specialties of Practicing Physicians by Type of Practice

Table 3 shows the standard 28 specialty classifications for all nonfederal California physicians, for those in private practice, and for those not in private practice. This table indicates a more complete breakdown of type of practice than does Table 1, with interns, residents, medical school faculty, administrators, physicians in research, and other physicians listed separately.

One word of caution regarding the interpretation of Table 3: Interns are generally classified as general practitioners in this table (see footnote 3 in the table). This classification causes a slight overstatement of the total number and per cent of physicans and, to a greater extent, of physicians not in private practice who are actually in "general practice." It is probably also true that an excessive number of hospital administrators and researchers are classified as general practitioners, merely because they fit into no other classification.

In terms of the specialty classification of all nonfederal physicians in California, general practice constitutes more than twice the number of physicians found in any other single specialty. The only other specialty which shows a figure of over 10 per cent of total is internal medicine, with 13.1 per cent of all physicians. Next in order are general surgery (9.7 per cent), psychiatry (6.6 per cent), obstetrics-gynecology (6.3 per cent), and pediatrics (5.5 per cent). Other specialties are each below 5 per cent of the total.

Some interesting differences in specialties between physicians in and not in private practice exist. Those specialties which show the greatest differentials in favor of physicians in private practice are allergy, dermatology, ophthalmology, otolaryngology, plastic surgery, and proctology. Conversely, those specialties which show greater than average numbers of physicians not in private practice are the following: Aviation medicine, cardiovascular, neurology, occupational medicine, pathology, psychiatry, pulmonary diseases, public health, and medical administration.

Of interest also is the composition of specialties within the medical practice among residents and practicing physicians. The listings below show the rank order in terms of total numbers of physicians in three types of practice.

TOTAL PHYSICIANS	FULL-TIME SPECIALISTS
1. Internal medicine	1. Internal medicine
2. General surgery	2. General surgery
3. Psychiatry	3. Obstetrics-gynecology
4. Obstetrics-gynecology	4. Psychiatry
5. Pediatrics	5. Pediatrics
6. Ophthalmology	6. Ophthalmology
7. Anesthesiology	7. Anesthesiology
8. Radiology	8. Orthopedic surgery
9. Orthopedic surgery	9. Radiology
10. Pathology	10. Urology

RESIDENTS

1. Internal medicine
2. General surgery
3. Psychiatry
4. Obstetrics-gynecology
5. Pediatrics
6. Pathology
7. Radiology
8. Orthopedic surgery
9. Anesthesiology
10. Ophthalmology

Classifications 1 through 5 show approximately the same ranking among the three categories. Ophthalmology, which ranks sixth among total physicians and full-time specialists, drops to tenth position among residents. Pathology, on the other hand, which ranks tenth among all physicians, and does not appear within the ten among specialists, shows up in sixth position among residents. The four other specialties which appear show less marked differentials. Urology which ranks tenth among specialists, is eleventh in the total ranking of residents.

Table 4: Age Distribution of Nonfederal Physicians, by Type of Practice

Table 4 shows the age distribution and median ages for nonfederal physicians in California, classified by type of practice. The median age for all nonfederal physicians at the time this analysis was made (spring 1961) was 44.8 years. This compares with a median age for *all* physicians of 43.0 years, since many federal physicians are in younger age groups.[3]

The median age for physicians in private practice not shown in Table 4) was 46.0 years, a slightly higher figure than for all physicians. Partial reason for this fact is that there are more interns and residents in the distribution, which tend to lower median age than there are retired physicians, which tend to raise it. Since these three heterogeneous groups comprise over half of all physicians not in private practice and counter-balance each other, an average age for physicians not in private practice would not be significant.

Within private practice, the median age of full-time specialists (45.0 years) is slightly below that of general practitioners (47.5 years) and considerably below that of part-time specialists (53.0 years), with the last category showing the highest average age by a margin of seven years over all private-practice physicians.

Among physicians not in private practice (excluding interns, residents, and retired physicians), medical administrators show the highest median age (58.0 years) and physicians in research the lowest median age (39.0 years).

Area age differentials were calculated, but space limitations do not allow their inclusion in this article. The results reveal that the median physician age was highest in rural counties (50.0 years) and in the Santa Barbara area (49.3 years). The former case probably represents a true distribution; the latter is skewed by a high retired population. Rural counties include Lake, Mariposa, Mono, Plumas, Sierra, and Trinity. The San Jose Metropolitan Area shows the lowest physician median age (41.7 years), correlating generally with the fact that this is a young, growing community. The median age in the Los Angeles-Long Beach Metropolitan Area was 45.2 years; the median age in the San Francisco-Oakland Metropolitan Area was 43.9 years.

Technical Notes

These tables represent some of the salient points in the first phase of the Study of the Characteristics of Physicians in California. A more detailed compilation of tables will be available for distribution in the near future. They will contain the following information: Sex and age of all physicians, A.M.A. membership by county medical society jurisdiction and by type of practice, types of service of federal service physicians, more complete breakdown by specialties by county medical society jurisdictions, further details as to age distribution by geographic area, and type of practice of physicians in private practice for counties and for county medical society jurisdictions. They can be obtained by writing to the Bureau of Research and Planning of the California Medical Association.

The Bureau of Research and Planning gratefully acknowledges the assistance of Mr. Robert A. Enlow, director, circulation and records department, American Medical Association, and his staff in supplying the IBM cards; and to the division of research of the California State Department of Public Health for its generous aid in providing staff and machine-time for the analyses and tabulations presented. Among the several individuals who have assisted in this task are: Robert Dyar, M.D., Louis F. Saylor, M.D., and Miss Jean Bowman. The services of Mr. Gordon Elmeer, an epidemiological trainee, were also made available to the bureau by the division.

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[3]This figure does not appear in Table 4.

Use of, and Satisfaction with, C.M.A. Relative Value Studies by Physicians in Active Practice in California

A Report by the Bureau of Research and Planning, California Medical Association

Data tabulated from the Study of the Characteristics of Physicians in California, conducted by the C.M.A. Bureau of Research and Planning, show that over 70 per cent of all physicians in active private practice utilize the Relative Value Studies, with over 41 per cent stating that they use it "all or most of the time." Use figures range from almost 78 per cent of physicians who participate in some form of prepayment program to under 53 per cent of physicians who do not participate in any such program.

Eighty per cent of all physicians in private practice who use the RVS expressed general satisfaction, with 11.8 per cent dissatisfied and 8.2 per cent stating no opinion as to their satisfaction. Of the 80 per cent who expressed satisfaction, two out of three use the RVS all or most of the time.

THE FOLLOWING ANALYSES discuss the use by physicians in California and their satisfaction with the C.M.A. Relative Value Studies. The information is based upon data collected by the Bureau of Research and Planning in the Fall of 1961. It is the first group of data to be tabulated from the almost 13,000 responses to the Study of Characteristics of Physicians in California, a census questionnaire sent to all physicians in the State as of Spring, 1961.

A total of 11,910 responses were used in compiling the tables shown below. Responses which were not used included the following: retired, not in the active practice of medicine, no longer living in California, and physicians with California addresses who actually reside overseas (APO and FPO San Francisco addresses).

Table 1 shows the proportion of physicians in private practice within the State who use the Relative Value Studies. Slightly over 70 per cent of all such physicians state that they make use of the RVS, with such usage ranging from "all or most of the time" to "only in specific cases or programs." The former group comprises 41.7 per cent of physicians, whereas the latter comprises 10.7 per cent. The group stating that they use the RVS "occasionally" makes up 18.5 per cent of the respondents, with the "non-users" accounting for the remaining 29.7 per cent.

Among those physicians who use the RVS all or most of the time, over 90 per cent expressed general satisfaction. Two hundred thirty-nine respondents (2.6 per cent of the overall total) stated that they are dissatisfied with the RVS but nevertheless use it all or most of the time. Satisfaction ratios seem to be correlated with amount of usage, with 69.3 per cent of those who use the RVS "occasionally" and 57.2 per cent of those who use the RVS "only for specific cases or programs" stating that they found the structure and performance of the RVS satisfactory.

Table 2 shows a breakdown of all physicians who use the RVS, in terms of their general satisfaction with it. Eighty per cent of all physicians who use the RVS expressed satisfaction with its structure and performance, with 66.4 per cent of the satisfied group stating that they use the RVS all or most of the time. Under 12 per cent of all users indicated dissatisfaction; over two out of three physicians in the dissatisfied group stated that they use the RVS only "occasionally" or "for specific cases or programs." Users who expressed no opinions as to their satisfaction accounted for the remaining 8.2 per cent of the group. Only two in five of the "no opinion" group are constant users of the RVS.

Tables 3 and 4 show percentages of usage of, and satisfaction with, the RVS for physicians in private

TABLE 1.—*Use of and Satisfaction with the Relative Value Studies by All Physicians**

Nature of Response	Number of Respondents	Per Cent of All Respondents	Per Cent of Satisfaction by Frequency of Use
Total respondents	9,061	100.0	
Do not use	2,688	29.7	
Use all the time	3,726	41.1	100.0
Satisfied	3,377	37.3	90.6
Not satisfied	239	2.6	6.4
No opinion	110	1.2	3.0
Use occasionally	1,680	18.5	100.0
Satisfied	1,164	12.8	69.3
Not satisfied	277	3.1	16.5
No opinion	239	2.6	14.2
Use only in specific cases	967	10.7	100.0
Satisfied	553	6.1	57.2
Not satisfied	238	2.6	24.6
No opinion	176	2.0	18.2

*Overall total response by 11,910 physicians includes 2,849 physicians not in private practice or who did not answer question regarding RVS usage.

TABLE 2.—*Satisfaction with and Frequency of Use of RVS by All Physicians in Private Practice Who Use the RVS*

Nature of Response	Number of Respondents	Per Cent of All Respondents	Frequency of Use by Degree of Satisfaction
Total using RVS	6,373	100.0	
Satisfied	5,094	80.0	100.0
Use all the time	3,377	53.0	66.4
Use occasionally	1,164	18.3	22.8
Use only in specific cases	553	8.7	10.8
Not satisfied	754	11.8	100.0
Use all the time	239	3.7	31.7
Use occasionally	277	4.4	36.8
Use only in specific cases	238	3.7	31.5
No opinion	525	8.2	100.0
Use all the time	110	1.7	21.0
Use occasionally	239	3.7	45.6
Use only in specific cases	176	2.8	33.4

TABLE 3.—*Satisfaction and Frequency of Use of RVS by Physicians in Private Practice Who Participate in any Prepayment Program*

Total Responding to Questions Concerning RVS	Number of Respondents	Per Cent Using RVS and Per Cent Satisfaction of RVS Users	Per Cent Use by Degree of Satisfaction
Total responding	6,324	100.0	
Do not use RVS	1,406	22.2	
Use RVS	4,918	77.8	
Total using RVS	4,918	100.0	
Satisfied	4,037	82.1	100.0
Use all the time	2,731	55.6	67.7
Use occasionally	886	18.0	21.9
Use only in specific cases	420	8.6	10.4
Not satisfied	514	10.5	100.0
Use all the time	174	3.5	33.9
Use occasionally	190	3.9	36.9
Use only in specific cases	150	3.1	29.2
No opinion	367	7.4	100.0
Use all the time	76	1.5	20.7
Use occasionally	170	3.4	46.3
Use only in specific cases	121	2.5	33.0

practice who participate in some form of prepayment program and for those who do not participate in any such program. Whereas almost 80 per cent of physicians in the former group use the RVS, under 53 per cent in the latter group do so. Of users only, 82.1 per cent of program participants find the RVS satisfactory and 10.5 per cent are dissatisfied; the percentages for non-participants are 72.4 and 16.8 respectively.

Of the 6,324 responses enumerated in Table 3, it is of interest that 6,089 were from participants in Blue Shield and/or Foundations for Medical Care or other physician-sponsored Foundations.

The foregoing data represent responses from almost 50 per cent of all physicians in private practice in California. Although the characteristics of the respondents, such as age and medical specialty, have yet to be compared with those of all physicians in private practice, the high rate of response suggests that these data are generally representative of the universe.

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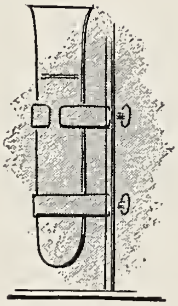
TABLE 4.—*Satisfaction and Frequency of Use of RVS by Physicians in Private Practice Who Do Not Participate in Any Frepayment Program*

Total Responding to Questions Concerning RVS	Number of Respondents	Per Cent Using RVS and Per Cent Satisfaction of RVS Users	Per Cent Use by Degree of Satisfaction
Total respondents	2,671	100.0	
Do not use RVS	1,258	47.1	
Use RVS	1,413	52.9	
Total using RVS	1,413	100.0	
Satisfied	1,023	72.4	100.0
Use all the time	625	44.3	61.1
Use occasionally	269	19.0	26.3
Use only in specific cases	129	9.1	12.6
Not satisfied	237	16.8	100.0
Use all the time	64	4.5	27.0
Use occasionally	86	6.1	36.3
Use only in specific cases	87	6.2	36.7
No opinion	153	10.8	100.0
Use all the time	33	2.3	21.6
Use occasionally	67	4.7	43.8
Use only in specific cases	53	3.8	34.6



The continued achievement of high standards of patient care in the preventive, curative, and restorative aspects of illness depends upon a harmonious, collaborative relationship between medicine and nursing. In an effort to protect and foster an enduring alliance of understanding and cooperation between these 2 major health professions, the Committee on Nursing has instituted a continuing program of liaison, communication, education, and research. The Committee has authorized publication of the following report on its objectives and program.

VERONICA L. CONLEY, PH.D., *Secretary*

Objectives and Program of the A.M.A. Committee on Nursing

THE PROGRAM of the A.M.A. Committee on Nursing is based on three general assumptions: (1) that nurses have a separate and distinct professional status and their contributions are those of co-workers; (2) that nursing should expect the medical profession to support and endorse high standards of nursing education and service; and (3) that each of the various levels of academic and technical accomplishment in nursing makes its own unique contribution to the total health care of the public.

On the basis of these broad assumptions, the Committee has adopted the following objectives:

1. *To expand and strengthen liaison activities between organizations representing the medical and nursing professions at the national, state, and local levels.*

Liaison has been established with all the major nursing organizations (including the American Nurses' Association, the National League for Nursing, the National Federation of Licensed Practical Nurses, the National Association for Practical Nurse Education and Service, and others) as well as with constituent and component medical associations, medical specialty groups, and several national organizations with a collateral interest in nursing.

The Committee feels that one of its major contributions is to promote interprofessional conferences between physicians and nurses. A committee composed of A.M.A. and A.N.A. representatives is now planning a conference on nurse-physician aspects of professional practice. The Committee on Nursing will also encourage the inclusion of nurses on programs of national and state medical meetings and attempt to remedy the scarcity of positively oriented, unbiased material on nursing in the medical literature.

2. *To study and report to the medical profession on current practices and trends in nursing and on developments among nursing auxiliary personnel.*

Through its headquarters staff, the Committee is collecting information on nursing matters vital to physicians. A file of abstracts, excerpts, and reprints is available for quick reference.

3. *To stimulate, initiate, and, where feasible, support research in areas pertinent to the nurse-physician relationship in professional practice.*

Such research requires the collaboration of many disciplines. Several nurse-physician teams are now engaged in extensive research projects. These include studies of interdisciplinary participation in planning care; the nursing needs of chronically ill ambulatory patients; and the amount and type of nursing service which makes the maximum contribution to maternal and infant welfare.

4. *To offer advisory services to both professions on interprofessional matters.*

The secretary and chairman of the Committee serve at present on the committee on careers of the National League for Nursing. The secretary is also a member of the advisory council of the National Federation of Licensed Practical Nurses, the National League for Nursing's committee to study costs of nursing education, and the hospital advisory council of the National Association for Practical Nurse Education and Service. The Committee will also serve as a consultant group to committees, councils, and departments within the A.M.A. Similar services have been offered to constituent and component medical associations.

5. *To provide support and assistance to the nursing profession and its nonprofessional auxiliary personnel in their efforts to maintain high standards.*

Nursing, like medicine, is faced with pressing demands for change if high standards are to be maintained in our present environment of rapid scientific and social advances. Nursing is now engaged in a continuous reevaluation of its educational system, its scope of services, its legal responsibilities, and other phases of its practice which reflect in the quality of patient care. This Committee supports the efforts of the nursing profession in maintaining high standards and offers its cooperation and assistance.

6. *To encourage physicians to accept invitations to serve on nursing school faculties.*

In view of growing pressures on the professional nurse to assume responsibilities of a medical nature, the teaching role of the physician warrants reevaluation. At the present time, some nursing schools are finding it necessary to assign nurse faculty members to lecture on medical subjects.

If the medical and nursing professions are to make the fullest use of their joint potential, they must have not only a common denominator of interest in the patient and a comparable body of knowledge, but also the kind of relationship that derives from a deeper appreciation of, and respect for, each other as allies working toward the same goals.

C. H. BENAGE, M.D.
ELIAS S. FAISON, M.D.
BENSON W. HARER, M.D.
CHARLES L. LEEDHAM, M.D.
WILLIAM R. WILLARD, M.D.
ARTHUR A. KIRCHNER, M.D.
Chairman

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NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. Charles E. Smith, dean of the University of California School of Public Health, Berkeley, has been awarded the **Bronfman Prize** for Public Health Achievement by the American Public Health Association. He was cited as an "eminent scientist, public health statesman and inspiring teacher, a great leader in man's war against disease and disability."

The award was presented at the recent annual meeting of the A.P.H.A. by Dr. Charles Glen King, association president.

* * *

Dr. Lester Breslow, chief of the Division of Preventive Medical Services of the State Department of Public Health, has been named chairman of the American Cancer Society's Advisory Committee on Research on the Etiology of Cancer. He will serve until August, 1963.

LOS ANGELES

Dr. James V. McNulty has been elected president of the State Board of Medical Examiners. Dr. McNulty has been on the board since 1960.

* * *

Dr. Carroll J. Bellis of Long Beach has been appointed professor and chairman of the department of surgery at the California College of Medicine, it has been announced by Dr. Benjamin B. Wells, dean of the Los Angeles medical school. Dr. Bellis, who received his M.D. degree at the University of Minnesota in 1936, received a Ph.D. degree there in 1941 and was instructor in surgery at the university's medical school before entering private practice in California.

* * *

Dr. Stafford L. Warren, vice chancellor of health sciences at University of California, Los Angeles, has been appointed to the National Advisory Health Council for a four-year term.

In his new post he will advise the Surgeon General on matters relating to health activities, training grants and career award programs.

* * *

The Childrens Hospital of Los Angeles will hold the First Clinical Conference in **Pediatric Anesthesiology** on January 26, 27, 1963. The two-day program will be devoted to the practical aspects of the preanesthetic, anesthetic, and postanesthetic management of infants and children. A model operating room will demonstrate modern anesthesia equipment and monitors.

Guest faculty will include Doctors Leonard Bachman, M. Kathleen Belton, and Robert M. Smith.

Further information may be obtained from Dr. M. Digby Leigh, Childrens Hospital, 4614 Sunset Boulevard, Los Angeles 27.

* * *

The Fourth National Conference on the Medical Aspects of Sports sponsored by the American Medical Association, under the auspices of the A.M.A. Committee on the Medical Aspects of Sports, will be held in Los Angeles at the Statler Hilton Hotel on November 25, 1962. The Conference will be held in conjunction with the Clinical Meeting of the American Medical Association, November 25-28, 1962.

SAN FRANCISCO

Dr. John B. Schaupp has been elected president-elect of the San Francisco Medical Society. **Dr. George K. Herzog, Jr.,** was elected secretary. **Dr. Alexander F. Fraser** was elected treasurer and **Dr. John R. Bryan** was elected editor.

* * *

The 1962 Albert Lasker Award in Basic Medical Research was won by **Dr. C. H. Li,** professor of biochemistry at Berkeley and director of the Hormone Research Laboratory associated with the University's School of Medicine in San Francisco.

Dr. Li won his award for the isolation and identification of six of the hormones of the anterior pituitary gland, including ACTH and the human growth hormone.

* * *

Dr. Alex L. Finkle, associate clinical professor of urology at University of California School of Medicine, San Francisco, recently received a grant of $85,000 from the U.S. Public Health Service for support of a study of abnormal blood flow in obstructive kidney disease.

GENERAL

Peacetime veterans with non-compensable service-connected disabilities who have just become eligible for Veterans Administration **medical and dental treatment,** under a new law, must secure approval from the nearest VA regional office or hospital before they go to private physicians and dentists for treatment at VA expense, acording to an announcement by the Veterans Administration.

For more information about benefits under the new law, or to make application for VA medical, dental or hospital care, peacetime veterans should contact the nearest VA regional office or hospital.

Plans for certification examinations for medical assistants are being made by the American Association of Medical Assistants following the formative meeting of a certifying board composed of physicians, educators and medical assistants. Purpose of the certification plan is to make the assistants better qualified for service in physicians' offices.

Mary Kinn, Santa Ana, chairman of the board, announced that examinations will be given simultaneously in Kansas, California and Miami Beach immediately preceding next year's annual meeting of the association. Professional assistance will be secured for administering and grading the examinations, Mrs. Kinn said.

At the recent annual meeting of the association in Detroit, two publications put out by California's medical assistants were **awarded top national honors.** *California Medical Assistant*, official state publication of the C.M.A.A., edited by Mrs. Donna C. Goodland of Saratoga, was judged best of the state journals. The Long Beach chapter's *The Quill*, edited by Patricia Laird, was named the best in the nation among the chapter publications.

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The Council on Undergraduate Medical Education of the American College of Chest Physicians, which is to hold its interim clinical meeting November 24 and 25 in Los

Angeles, is offering **three cash awards** to be given annually for the best contribution prepared by undergraduate medical students on any phase of the **diagnosis or treatment of chest diseases** (heart or lungs).

The official application form and additional information may be obtained from Mr. Murray Kornfeld, Executive Director, American College of Chest Physicians, 112 E. Chestnut St., Chicago 11, Ill.

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Dr. Sol R. Baker, Los Angeles, was elected president of the American Cancer Society's California Division at the recent annual meeting of the organization.

Dr. John W. Cline of San Francisco, president of the Cancer Advisory Council, was awarded the Cancer Society's bronze medal.

Dr. David A. Wood, San Francisco, was elected an honorary life member of the National Board of Directors of the American Cancer Society at its recent meeting in New York City.

EDUCATION NOTICES

POSTGRADUATE

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Lower Extremities Prosthetics. Monday through Friday. December 10 through 14. Fee: $125. 40 hours.

Selected Topics in Pharmacology and Therapeutics. Friday and Saturday. January 11 and 12. Fee: $50. 12 hours.

Workshops in the Clinical Use of Radioisotopes. Alternate Wednesday afternoons. January 23 through May 22. 20 hours.*

Surgical Anatomy. Wednesday evenings. January 23 through March 27. Fee: $50. 20 hours.

Common Problems in Dermatology. Thursday afternoons. February 14 through March 21. Fee: $50. 12 hours.

Clinical Postgraduate Program in Mexico City. February 20 to March 2. Fee: $100. 18 hours.

Proctology and Sigmoidoscopy. Thursday through Saturday. February 21 through 23. Fee: $60. 15 hours.

Clinical Traineeships. Anesthesia, Dermatology, Pediatrics, Anatomy, Radioisotopes and Urology. Dates to be arranged. 2 weeks: $150; 4 weeks: $250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., Assistant Dean for Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 2115.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Practical Management of Problems in Adolescent Medicine. Saturday. November 3. Children's Hospital, San Francisco. Fee: $15. 6½ hours.

Problems in EKG Interpretation. Saturday and Sunday. November 3 and 4. Fee: $40. 12 hours.

Clinics in Dermatology. Saturday and Sunday, November 10 and 11. Fee: $45. 13 hours.

Psychiatry in General Practice—A Clinical Workshop. Saturday and Sunday. November 17 and 18. Napa State Hospital. Fee: $20. 11 hours.

Changing Concepts of Diagnosis and Management of Vascular Disease. Saturday and Sunday. November 17 and 18. Fee: $40. 12½ hours.

Clinical Applications of Symptoms and Signs. Friday through Sunday. November 30 through December 2. Fee: $10 each ½-day session, $50 all sessions. 19 hours.

The Neck and Shoulder Girdle. Friday and Saturday. November 30 and December 1. Fee: $40. 14 hours.

Practical Electrocardiography. Friday and Saturday. November 30 and December 1. Franklin Hospital, San Francisco. Fee: $40. 12½ hours.

Psychiatric Perspectives in Medicine. Saturday and Sunday. December 1 and 2. Stockton State Hospital. Fee: $15. 14 hours.

Ocular Pharmacology and Therapeutics. Thursday through Saturday. December 6 through 8. Fee: $60. 18 hours.

Puberty and the Climactic. Friday and Saturday. December 7 and 8. Fee: $40. 12 hours.

The Initial Clinical Impact (The Physician and the Emotionally Disturbed Patient). Thursday through Saturday. December 13 through 15. Langley Porter Neuropsychiatric Institute. Fee: $45. 14½ hours.

The Pediatric Chest. Saturday. January 12. Children's Hospital, San Francisco. Fee: $15. 6½ hours.

Clinics in Daily Practice. Friday through Sunday. January 18 through 20. Fee: $10 each ½-day session. $50 all sessions.

Recent Advances in Drug Therapy. Saturday and Sunday. February 9 and 10.*†

Neuropsychiatry and General Practice. Napa State Hospital. Thursday evenings. February 14 through March 21. Fee: $10. 12 hours.

Clinical Neurology. Friday through Sunday. February 15 through 17.*†

Course for Physicians in General Practice. Monday through Friday. February 25 through March 1. Mount Zion Hospital, San Francisco.*†

Courses presented by Special Arrangement (continuously):

1. **Principles and Clinical Uses of Radioisotopes** (full time for one to three months).
2. **Anesthesiology** (full time for one to three weeks).

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., Assistant Dean, Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22. MOntrose 4-3600, Ext. 179.

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*Fees to be announced.

†Hours to be announced.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.

Advanced Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85. Physicians may register at any time.

Symposium on Neoplastic Diseases (Homecoming). Thursday and Friday. November 1 and 2. Ambassador Hotel. Fee: $25.

Psychiatry in Medical Practice. Saturday and Sunday. November 17 and 18. Santa Barbara County General Hospital. Fee: $25.

Electrocardiographic Interpretation. Thursday through Saturday. December 6 through 8. Statler-Hilton Hotel, Los Angeles.*†

1963

Psychiatry in Medical Practice. January 12 and 13. Two-day intensive workshop. San Bernardino County General Hospital. Fee: $35.

Pediatric Psychiatry for General Practitioners and Pediatricians. January 30 through April 10. Psychiatric Unit, Los Angeles County General Hospital. Fee: $35.

Psychiatry Case Conferences for Medical Practitioners. January 30 through April 10. Eleven sessions, to be held simultaneously at St. John's Hospital, Santa Monica; Orange County General Hospital, Orange; Memorial Hospital of Long Beach; Cedars of Lebanon Hospital. Fee: $40.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

Psychiatry Courses. *Contact:* Allen J. Enelow, M.D., Associate Clinical Professor, Department of Psychiatry, 1934 Hospital Place, Los Angeles 33, CA 5-3131, Ext. 71951.

LOMA LINDA UNIVERSITY

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed, other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.
2. **Pulmonary Diseases** (can be arranged).

Continuously: **Illustrated Medical Lectures.** Thirty-minute tape recordings and accompanying 35 mm. filmstrips, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. Twelve or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. *Contact:* Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For information contact W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

PRESBYTERIAN MEDICAL CENTER

Gastroenterology. Saturday, November 10. 7 hours. Fee: $25.‡

Pediatrics. Saturday, December 1. 7 hours. Fee: $25.‡

Diabetes and Thyroid. Saturday, January 12, 1963. 7 hours. Fee: $25.‡

Arteriosclerosis. Saturday, January 19, 1963. 7 hours. Fee: $25.‡

Dermatology. Saturday, February 2, 1963. 7 hours. Fee: $25.‡

Operable Heart Disease. Friday and Saturday. March 1 and 2, 1963. 14 hours. Fee: $25.

Keratoplasty. Wednesday through Friday. March 6 through 8.*† *Contact:* Secretary of the Eye Bank, Presbyterian Medical Center.

Office Diagnosis. Saturday, March 9, 1963. 7 hours. Fee: $25.‡

Cancer. Saturday and Sunday. March 16 and 17, 1963. 14 hours. Fee: $25.

Fractures: "4-R's." Saturday, March 23, 1963. 7 hours. Fee: $25.‡

Minor Surgery: Office and Hospital. Saturday, April 6, 1963. 7 hours. Fee: $25.‡

Contact: Arthur Selzer, M.D., Chairman, Education Committee, Presbyterian Medical Center, Clay & Webster Streets. San Francisco 15. WEst 1-8000.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

A Symposium on the New Views of Hypertension. By the faculty from the University of California Medical Center, San Francisco. Friday, January 18. Sister's Hospital, Santa Maria. *Chairman:* Clifford E. Case, M.D., P.O. Box 315, Santa Maria.

A Symposium on the New Views on Hypertension. By the faculty from the University of California Medical Center, San Francisco, in cooperation with San Luis Obispo County Medical Society. General Hospital, San Luis Obispo. Saturday, January 19. *Chairman:* Henry A. Zevely, M.D., 878 Boysen Avenue, San Luis Obispo.

California Medical Association Postgraduate Institutes—1963.

Southern Counties. In cooperation with Loma Linda University School of Medicine. Thursday and Friday. February 7 and 8. El Mirador Hotel, Palm Springs. *Chairman:* Andrew O. Fitzmorris, M.D., 1701 North Palm Canyon, Palm Springs.

West Coast Counties. In cooperation with UCLA School of Medicine. Thursday and Friday. March 7 and 8. Del Monte Lodge, Pebble Beach. *Chairman:* James D. Niebel, M.D., Suite 409, Professional Building, Monterey.

North Coast Counties. In cooperation with USC School of Medicine. Thursday and Friday. April 4 and 5. Hoberg's Resort, Lake County. Chairman: Richard C. Barnett, M.D., 450 Pitt Avenue, Sebastopol.

San Joaquin Valley Counties. In cooperation with Stanford University School of Medicine. Thursday and Friday. May 30 and 31. Ahwahnee Hotel, Yosemite. *Chairman:* Thomas J. Fuson, M.D., 2944 Fresno Street, Fresno.

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‡These courses will be offered at $25 per course or 4 courses for $80 or 8 courses for $120.

Sacramento Valley Counties. In cooperation with University of California School of Medicine, San Francisco. Friday and Saturday. June 28 and 29. (Place to be announced.) *Chairman:* A. John Quinn, M.D., 2600 Capitol Avenue, Suite 312, Sacramento 16.

For information regarding Postgraduate Circuit Courses and Postgraduate Institutes, contact: Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2. PRospect 6-9400, Ext. 68.

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AUDIO-DIGEST FOUNDATION

Audio-Digest Foundation, the California Medical Association's nonprofit subsidiary organized for the practicing physician's continuing postgraduate medical education, has released its 1962 Catalog of Classics. Representing tape-recorded highlights of the past year's most significant medical meetings (American Medical Association, American College of Physicians, American Society of Anesthesiologists, American College of Obstetricians and Gynecologists, and dozens of university postgraduate courses) the new Catalog lists 355 one-hour tape-recordings representing all areas of medical practice. Copies of the catalog and information concerning continuing subscriptions to Audio-Digest programs (General Practice, Obstetrics-Gynecology, Anesthesiology, Pediatrics, Internal Medicine and Surgery and a prospective new service in Ophthalmology-Otorhinolaryngology) may be obtained by writing to Claron L. Oakley, Editor, 618 South Westlake Avenue, Los Angeles 57.

Medical Dates Bulletin

American Rhinologic Society 8th Annual Meeting. Statler Hilton Hotel, Los Angeles. November 1 and 2. *Contact:* American Rhinologic Society, 530 Hawthorne Place, Chicago 13.

TB & Health Association of Los Angeles County Symposium on the Techniques of Teaching Diseases of the Chest. November 3. Sheraton West Hotel, Regency and Wedgewood Rooms, Los Angeles. 8:30 a.m. to 3:30 p.m. *Contact:* Oscar J. Balchum, M.D., chairman, Planning Committee, c/o TB & Health Assoc. of Los Angeles County, 1670 Beverly Blvd., Los Angeles 26.

American Academy of Ophthalmology and Otolaryngology, Las Vegas Convention Center, Las Vegas. November 4 through 9. *Contact:* W. L. Benedict, M.D., executive secretary-treasurer, 15 Second Street, S.W., Rochester, Minn.

Los Angeles Pediatric Society 19th Annual Brennemann Lectures, Ambassador Hotel, Los Angeles. Speakers: Albert B. Sabin, M.D., and Malcolm A. Holliday, M.D. November 7 and 8. *Contact:* Leslie M. Holve, M.D., vice-president, 1015 Gayley Avenue, Los Angeles 24.

San Diego County General Hospital 16th Annual Postgraduate Assembly, in conjunction with University of Oregon Medical School. November 9 and 10. Town and Country Hotel, San Diego. *Contact:* David E. Wile, M.D., chairman, 2850 6th Avenue, San Diego 3.

American Otorhinologic Society for Plastic Surgery, Inc. November 9 through 13. Ambassador Hotel, Los Angeles. *Contact:* Joseph G. Gilbert, M.D., secretary, 75 Barberry Lane, Roslyn Heights, N. Y.

California Conference of Local Health Officers Biannual Meeting. Riverside County Health-Finance Building. November 13-14. *Contact:* Wm. Allen Longshore, Jr., M.D., asst. chief, Division Community Health Services, State Dept. of Public Health, Berkeley.

American College of Physicians, Southern California Region Annual Basic Science Lectureship Dinner. Statler Hotel, Los Angeles, November 14, 6:30 p.m. *Contact:* George C. Griffith, M.D., A.C.P. Governor for Southern California, P. O. Box 25, 1200 North State Street, Los Angeles 33.

San Diego Chapter of California Academy of General Practice, 7th Annual Las Vegas Meeting. November 15 through 18. Flamingo Hotel, Las Vegas. 9:00 a.m. to 3:00 p.m. *Contact:* Edwin N. Reithmayer, M.D., 1115 W. Chase, El Cajon.

Los Angeles Orthopedic Hospital and USC School of Medicine Symposium. "Hip Problems in Children." Orthopedic Hospital, Los Angeles. November 24, 8:30 a.m. to 4:30 p.m. *Contact:* J. Vernon Luck, M.D., and Robert Mazet, M.D., chairmen, Orthopedic Hospital, 2400 South Flower Street, Los Angeles 7.

American College of Chest Physicians (Interim Session). November 24 and 25. Ambassador Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 E. Chestnut Street, Chicago 11.

Coordinators of Cancer Teaching. November 24 and 25. Sheraton Huntington, Pasadena, Saturday, 8:00 p.m. Los Angeles General Hospital, Sunday, 9:15 a.m. *Contact:* Lewis W. Guiss, M.D., secretary, Department of Surgery, USC School of Medicine, Los Angeles.

American Medical Association National Conference on the Medical Aspects of Sports. Statler Hilton Hotel, Los Angeles. Sunday, November 25. Contact: Fred V. Hein, Ph.D., secretary, A.M.A. Committee on the Medical Aspects of Sports, 535 N. Dearborn Street, Chicago 10, Ill.

American Medical Association Clinical Meeting, Biltmore Hotel, Los Angeles. November 25 through 28. *Contact:* F. J. L. Blasingame, M.D., executive vice-president, 535 N. Dearborn, Chicago 10.

American Medical Women's Association, Ambassador Hotel, Los Angeles. November 29 through December 2. *Contact:* Jessie Laird Brodie, M.D., executive director, 1790 Broadway, New York 19.

West Coast Allergy Society, Annual Meeting. December 1. Portland, Oregon. *Contact:* Mr. J. M. Chesebro, executive secretary, 1818 S.E. Division Street, Portland.

Scripps Clinic and Research Foundation, Institute for Cardiopulmonary Diseases. "Cardiology: Physiology and Biochemistry." December 4 to 7. Sherwood Hall, La Jolla. Fee: AAC Members $50. Non Members $100. *Contact:* Harold M. Lowe, M.D., 476 Prospect Street, La Jolla.

1963 MEETINGS

Los Angeles Pediatric Society Arthur H. Parmelee Lecture. January 9, 6:30 p.m. Ambassador Hotel, Los Angeles. *Contact:* Leslie M. Holve, M.D., vice president, 1015 Gayley, Los Angeles 24.

Fresno County Heart Association, Central California Physicians' Cardiovascular Symposium. January 18, 9:00 a.m. to 5:00 p.m. *Contact:* J. A. Polhemus, M.D., chairman, Professional Services Committee, 1921 East Belmont Street, Fresno.

Orange County Heart Association 8th Annual Symposium on Cardiovascular Disease. Disneyland Hotel. January 19. *Contact:* Howard G. Buswell, executive director. P.O. Box 1704, Santa Ana.

American Thoracic Society. "The Evaluation of Pulmonary Function." January 21 through 25. UC Medical Center, San Francisco. Co-sponsors: Tuberculosis and Health Association of California, California Thoracic Society, UC School of Medicine, Stanford University School of Medicine and California Department of Public Health. Fee: ATS members $75. Non members $100. *Contact:* John R. Goldsmith, M.D., chairman, Pulmonary Function Course Planning Committee, 130 Hayes Street, San Francisco 2.

First Clinical Conference on Pediatric Anesthesia. Children's Hospital, Los Angeles. January 26 and 27. *Contact:* M. Digby Leigh, M.D., 4614 Sunset Boulevard, Los Angeles 27.

Institute for Metabolic Research 11th Annual Session. "Dynamics of Endocrine and Metabolic Diseases." February 11 through 13. Highland-Alameda County Hospital, Main Auditorium, Oakland. *Contact*: L. W. Kinsell, M.D., director, Institute for Metabolic Research.

American College of Physicians Southern California Regional Meeting, Hotel Del Coronado, Coronado. February 15 through 17. Submit abstract of 300 words or less on or before November 1, 1962, to Walter P. Martin, M.D., 211 Cherry Avenue, Long Beach 2. *Contact:* George C. Griffith, M.D., Governor for Southern California, A.C.P., P.O. Box 25, 1200 North State Street, Los Angeles 33.

Los Angeles County Medical Association, 8th Spring Postgraduate Meeting. Statler Hitlon Hotel, Los Angeles. February 16 and 17. *Contact:* T. W. McIntosh, M.D., 686 E. Union Street, Pasadena.

Los Angeles County Heart Association, Midwinter Symposium on Heart Disease. Ambassador Hotel, Los Angeles, February 27, 9:00 a.m. to 4:00 p.m. *Contact:* Mr. Chauncey A. Alexander, executive director, 2405 West 8th Street, Los Angeles 57.

American College of Cardiology 12th Annual Meeting. February 28 through March 3. Ambassador Hotel, Los Angeles. *Contact:* Philip Reichert, M.D., executive director, Empire State Building, 350 - 5th Ave., New York 1.

Loma Linda University School of Medicine Alumni Postgraduate Convention. March 3 through 7. Refresher Courses: March 3 and 4, 8:00 a.m. to 12:00 noon; 2:00 p.m. to 5:00 p.m. White Memorial Medical Center. Scientific Assembly: March 5 through 7, Ambassador Hotel. *Contact:* Jack Hallatt, M.D., general chairman, 316 N. Bailey St., Los Angeles 33.

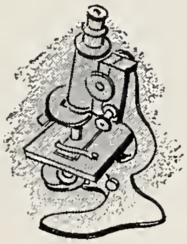
American Board of Surgery. 13th Annual Postgraduate Medical and Surgical Assembly. Pioneers Memorial Hospital, Brawley. March 15 and 16. *Contact:* Wayne E. Garrett, M.D., 528 G. Street, Brawley.

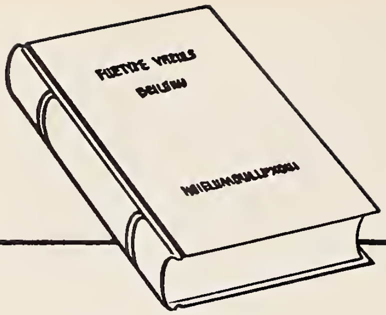
International College of Applied Nutrition, Third Annual Convention. Huntington-Sheraton Hotel, Pasadena. March 21 and 22. *Contact:* Donald C. Collins, M.D., international secretary-general, 7046 Hollywood Boulevard, Suite 503, Hollywood 28.

California Medical Association Annual Session. March 23 through 27. Ambassador Hotel, Los Angeles. House of Delegates convenes March 23. Scientific Program begins March 24. *Contact:* John Hunton, executive secretary, California Medical Association, 693 Sutter Street, San Francisco 2.

American Academy of Pediatrics, Spring Session. Statler Hilton Hotel, Los Angeles. April 22 to 24. *Contact:* W. J. Becker, business manager, 1801 Hinman Avenue, Evanston, Illinois.

American Gastroenterological Association. May 30 through June 1. Fairmont Hotel, San Francisco. *Contact:* Wade Volwiler, M.D., Department of Medicine, University of Washington, Seattle.





THE PHYSICIAN'S *Bookshelf*

PROBLEMS OF BLOOD PRESSURE IN CHILDHOOD—Arthur J. Moss, M.D., Associate Professor of Pediatrics (Cardiology), Department of Pediatrics, and Forrest H. Adams, M.D., Professor of Pediatrics and Head Division of Cardiology, Department of Pediatrics, both at the University of California School of Medicine, Los Angeles. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1962, 106 pages, $5.50.

This small volume presents much useful information which is not elsewhere easily available in such succinct form. Both methodology and interpretation receive excellent discussion. The extensive tables contain valuable standards for all ages of childhood and for variations in health and disease and in the interpretation of these variations. The format is clear and concise. This volume is a valuable reference which should be available in every library devoted to pediatrics.

Edward B. Shaw, M.D.

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THE POSTTHROMBOPHLEBITIC SYNDROME—Roy J. Popkin, M.D., F.A.C.A., Attending in Medicine, Cedars of Lebanon Hospital; Chief (Emeritus), Peripheral Vascular Disease Clinic, Cedars of Lebanon Hospital, Los Angeles, Calif. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1962. 221 pages, $8.50.

This monograph by Dr. Roy J. Popkin on the postthrombophlebitic syndrome deals with all aspects of this disease entity, including diagnosis, acute and long term management, complications and sequelae. It covers the industrial, economic and social aspects of the disease. After a brief historical introduction, the anatomy and physiology of the lower extremities are carefully considered. The nature of thrombosis, the effects of stasis and sludging of the blood, and the pathogenesis of the postthrombophlebitic syndrome are well summarized. The place of phlebography in the diagnosis of the disease is emphasized. The conservative management is well covered, including discussions on elastic bandages, exercise, medications, treatment of local ulcers, physiotherapy, the use of anticoagulant and fibrinolytic agents. Unfortunately, the section on surgical management of the disorder is sparsely documented, and one could find little to recommend in the section on surgical treatment of this disorder. Actually, a major arm of therapy in the postthrombophlebitic syndrome centers around the surgical aspects of the disease, and for one interested in therapy the book is inadequate. There is considerably less information in it, for example, than in one of the standard textbooks on varicose veins, such as the recent excellent book by Dodd and Cockett. The reviewer would feel that this book is a worthwhile contribution to the understanding of the postthrombophlebitic syndrome, but would feel that there is hardly sufficient new information in it to warrant use of the book other than for a quick review. It cannot be recommended for general purchase for either the internists' or surgeons' library. It is suitable for a general medical library in a hospital or university environment.

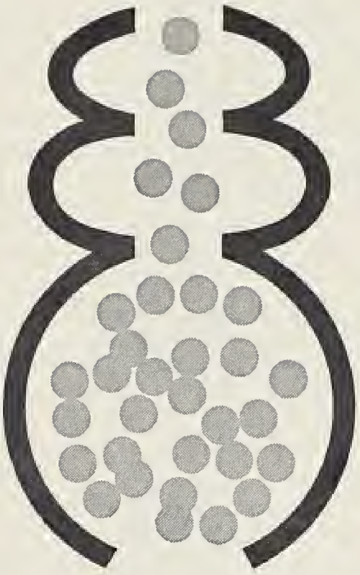
AN INTRODUCTION TO THE STUDY OF DISEASE (formerly "An Introduction to Medical Science")—Fifth Edition, Thoroughly Revised, 174 Illustrations and 4 Colored Plates—William Boyd, M.D., Dipl. Psychiat., M.R.C.P. (Edin.), Hon. F.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.C.S. (Can.), F.R.S. (Can.), LL.D. (Sask.), (Queen's), D.Sc. (Man.), M.D. (Hon.) (Oslo), Professor Emeritus of Pathology, The University of Toronto; Visiting Professor of Pathology, The University of Alabama; Formerly Professor of Pathology, The University of Manitoba and the University of British Columbia. Lea & Febiger, 600 Washington Square, Philadelphia 6, Pa., 1962. 478 pages, $7.50.

This is a masterful book intended for those beginning or considering the study of medicine, medical technology, and other paramedical disciplines. It is the fifth edition of a book formerly entitled, *An Introduction to Medical Science*, but the new edition has many rewritten chapters. Among those are: "Derangements of Body Fuids," "Fungus Infection," "Viruses and Rickettsia," "Ionizing Radiation," "Hereditary Diseases," "Immunity and Hypersensitivity," and "Care of the Patient." All of the chapters have been rewritten and revised and, as the author is justly famous, place an emphasis on the relationship of symptoms to lesions. The present book is not only a general introduction to the study of disease, but presents an overview of the subject, so that one can grasp the present status of the total subject, even though the survey must necessarily be brief and undetailed. Actually it is far more difficult to present an overview of the principles of disease rather than to present details of the individual organs and systems and their diseases, and the author succeeds admirably in presenting this "airplane view of the subject." As an aside, the author gives a list of classical prefixes and suffixes which are helpful in understanding the medical terms. In addition, he gives the classic derivation of many words, also of great interest and help to the newcomer to the study of disease.

The organization of the book consists of fourteen introductory chapters on some general principles including an excellent account of the healthy cell and of the importance of the cell membrane, the nucleus, chromosomes, the mitochondria, nucleic acids, etc. There are then fifteen chapters on the specific organs and their diseases, which combine a concise description of the disease as well as a discussion of normal anatomy and physiology. As might be expected in a book of this sort, there is no discussion of moment regarding treatment. One hundred and seventy-four figures illustrate the text and by and large, these are clear and informative. The index is complete, but there is no bibliography.

In general, the book is an excellent contribution to the need of the intelligent layman and paramedical individual for a comprehensive general account of the study of disease and should reach a broad audience. The text is clear, interestingly written and can be very highly recommended.

Maurice Sokolow, M.D.



LOMOTIL®

(brand of diphenoxylate hydrochloride with atropine sulfate)

ANTIDIARRHEAL TABLETS and LIQUID

lowers motility / relieves cramping / controls diarrhea

Roentgenographic studies by Demeulenaere[1] established that a single dose of 10 mg. of Lomotil slowed gastrointestinal transit within two hours and that it maintained its decelerating activity for more than six hours.

In diarrhea this lowered propulsion permits a physiologic absorption of excess fluid, lessens frequency and fluidity of stools and gives safe, selective, symptomatic control of most diarrheas. Concurrently, it conserves electrolytes and controls cramping.

Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

NOTE: Narcotic prescription is required in California.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastrointestinal, Acta Gastroent. Belg. 21:674-680 (Sept.-Oct.) 1958.
2. Kasich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastroent. 35:46-49 (Jan.) 1961.
3. Weingarten, B.: Weiss, J., and Simon, M.: A Clinical Evaluation of a New Antidiarrheal Agent, Amer. J. Gastroent. 35:628-633 (June) 1961.

G. D. SEARLE & CO.
Research in the Service of Medicine

A.M.A. Foundation Appeals For Student Loan Funds

The American Medical Association's new Education and Research Foundation has issued an urgent appeal for substantial additional funds to keep in operation its new loan guarantee program for medical students, interns and residents.

The program, begun last February, already has loaned more than $6,000,000 to more than 3,300 physicians-to-be. These are long-term loans, made through a bank, with the A.M.A.-E.R.F. acting in effect as co-signer. The bank provides $12.50 in loan funds for each $1 posted in the loan guarantee fund by the new foundation.

Almost $700,000 in loan guarantee funds have been posted by physicians and others. The fund is now virtually exhausted and new requests for loans are being received at the rate of 150 each week. Loans have been made in 49 states, to students in 81 different medical schools, and to interns and residents in 320 different hospitals.

"We are almost swamped by the success of this program," declared George M. Fister, M.D., president of the A.M.A.

"The immediate and widespread rush of loan applications is a clear-cut indication of the need for more funds on the part of most of the 55,000 young men and women now in medical schools and serving internships and residencies in hospitals," Dr. Fister said.

Dr. Fister hailed the new loan guarantee program as an outstanding example of free enterprise meeting the needs of a segment of society in the traditional American manner.

"These young men and women don't want government handouts. They want to pay their own way, if they can just manage to find some means of so doing. The loan guarantee program of the A.M.A.-E.R.F. is an important part of helping the future doctors to finance their own education and training," he said.

"I am confident that the additional funds needed to keep this program an on-going, viable support of medical education will be forthcoming," Dr. Fister said.

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High Altitude Skiing Hazardous for Some

High altitude skiing can be hazardous for certain susceptible individuals, according to an editorial in the September 29 *Journal of the American Medical Association.*

Published reports of two skiers who developed a potentially fatal lung condition while skiing at altitudes of from 6,000 to 10,300 feet were cited in the editorial.

The skiers, both physicians, aged 46 and 48, experienced difficulty in breathing, developed a cough and turned blue from lack of oxygen, the editorial said. Their condition was diagnosed as pulmonary edema, a leakage of fluid into the air spaces and tissues of the lungs, it said.

The 48-year-old physician was near death when admitted to a hospital, the editorial said, but both patients recovered rapidly with oxygen therapy and bed rest.

The *Journal* also cited reports of persons who live at high altitudes developing the same syndrome upon returning from a short stay at sea level.

These studies suggest that the syndrome is due to a transient constriction of the minute veins of the lung, the editorial said. There also are indications that susceptibility may be inherited, it said.

A.M.A. Advises on Employment Of Former Mental Patients

Most persons who have recovered from mental illness can return to the same type of job held before, the American Medical Association said recently.

"Successful psychiatric treatment results in improvement in job performance, attendance, safety, conduct, attitude, and insight," a joint statement by A.M.A.'s Council on Occupational Health and Council on Mental Health said.

The performance of a recovered patient compares favorably with that of employees in general, it said, adding:

"If the individual can handle the job or can adjust to it in reasonable time, and if he has medical approval to work, he should be given the same consideration for employment as any other worker."

It is a "too common misconception that once a person has had a mental illness he remains ill for the rest of his life," the A.M.A. statement said, and the patient himself may share this pessimistic outlook.

While impairment does greatly restrict employability of some chronic schizophrenic patients, it said, "individuals with arrested schizophrenia and unimpaired work habits usually can return successfully to work under proper supervision and with acceptable job conditions."

"Persons who have manic-depressive reactions experience relapses which may interrupt their work but which do not necessarily render them unemployable," the statement said.

Neither should the mere diagnosis of mental illness be used to deny employment, it was pointed out.

"Because of great variations in type and severity of the illness, and because it often is impossible to make an accurate psychiatric diagnosis until quite some time after the symptoms appear, a diagnosis of psychiatric illness is not, per se, sufficient ground for denying employment or discharging an employee," the statement said. "Indeed, many psychiatric patients, including psychotics, make very satisfactory employees."

In conclusion, it said: "Successful employment of individuals who are physically handicapped depends upon proper placement and an understanding of the problems of these individuals on the job. This applies equally to individuals who have recovered from psychiatric illness."

The statement, issued as a guide to physicians in evaluating employability of former psychiatric patients, appeared in the September 22 *Journal of the American Medical Association.* In was prepared by a joint committee of the two American Medical Association councils consisting of L. E. Himler, M.D., Ann Arbor, Mich., chairman; R. T. Collins, M.D., Rochester, N. Y.; W. D. Ross, M.D., Cincinnati; L. H. Bartemeier, M.D., Baltimore; E. S. Jones, M.D., Hammond, Ind., and L. N. Hames, secretary, Chicago.

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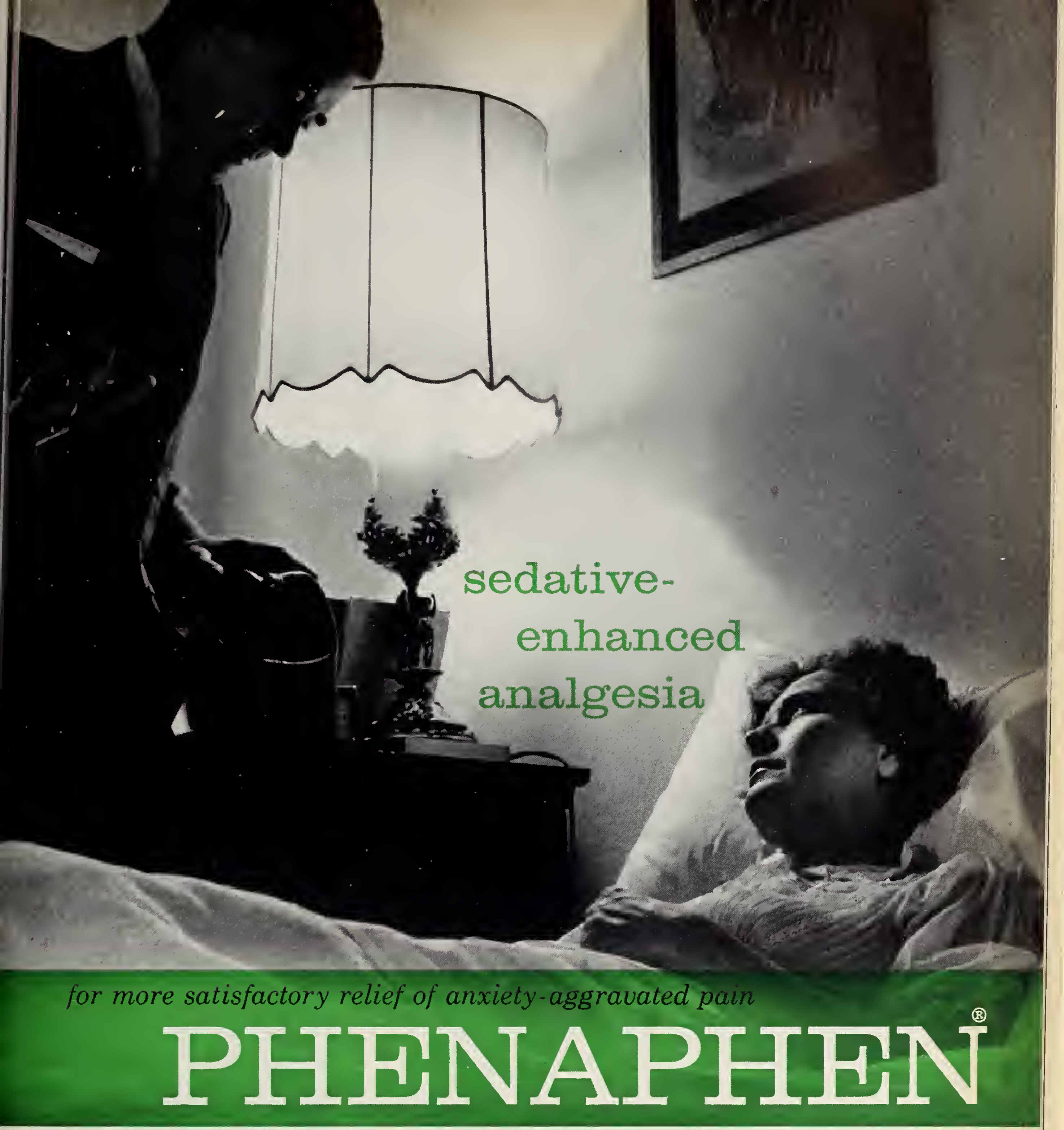

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(Continued on Page 33)

irradiation is the preferred form of therapy, either alone or in combination with surgery. When last seen 60 per cent of patients were apparently cured. Multiple courses of irradiation, repeated surgery, or a combination of both were required for 45 per cent.

* * *

Detection of Coxsackie Virus Antigen in Urinary Cells by Immunofluorescence—Y. Hinuma, T. Miyamoto, Y. Murai, and N. Ishida. Lancet, 2:179 (July 28) 1962.

The complement method of fluorescent antibody technique revealed Coxsackie B-5 virus antigen in exfoliated cells in the urine of 6 to 12 patients with aseptic meningitis. The diagnosis of Coxsackie B-5 virus infection was confirmed in four of the six patients, by virus isolation or by demonstration of specific antibody rise, or both. Detection of virus antigen in urinary cells by the immunofluorescence may aid in rapid specific diagnosis of the virus infection.

* * *

A Novel Test for Pregnancy—R. X. Sands, J. Mayron, and A. V. Pinski. New York J. Med., 62:2494 (Aug. 1) 1962.

In the experiments described the withdrawal bleeding which follows the combined use of anhydrohydroxyprogesterone, a progestational agent, and ethinyl estradiol, an estrogen (Pro-Duosterone [PD]) was used in testing for the presence of early pregnancy. The procedure is referrred to as the PD pregnancy test. Of 122 women in whom the PD and the AZ (Aschheim-Zondek) tests (Frank-Berman modification) were performed, 66 were found to be pregnant and 56 nonpregnant. Among the 66 pregnant nine false results were obtained with the AZ test and one with the PD test, an accuracy of 98.4 per cent with the latter. In the nonpregnant group four incorrect results were obtained with the PD test and one with the AZ test. No significant side effects occurred in this group or in an additional series of 100 cases, all known to be pregnant. In the largest number of cases a negative result becomes available within three days after the last dose of the estrogen-progesterone combination.

* * *

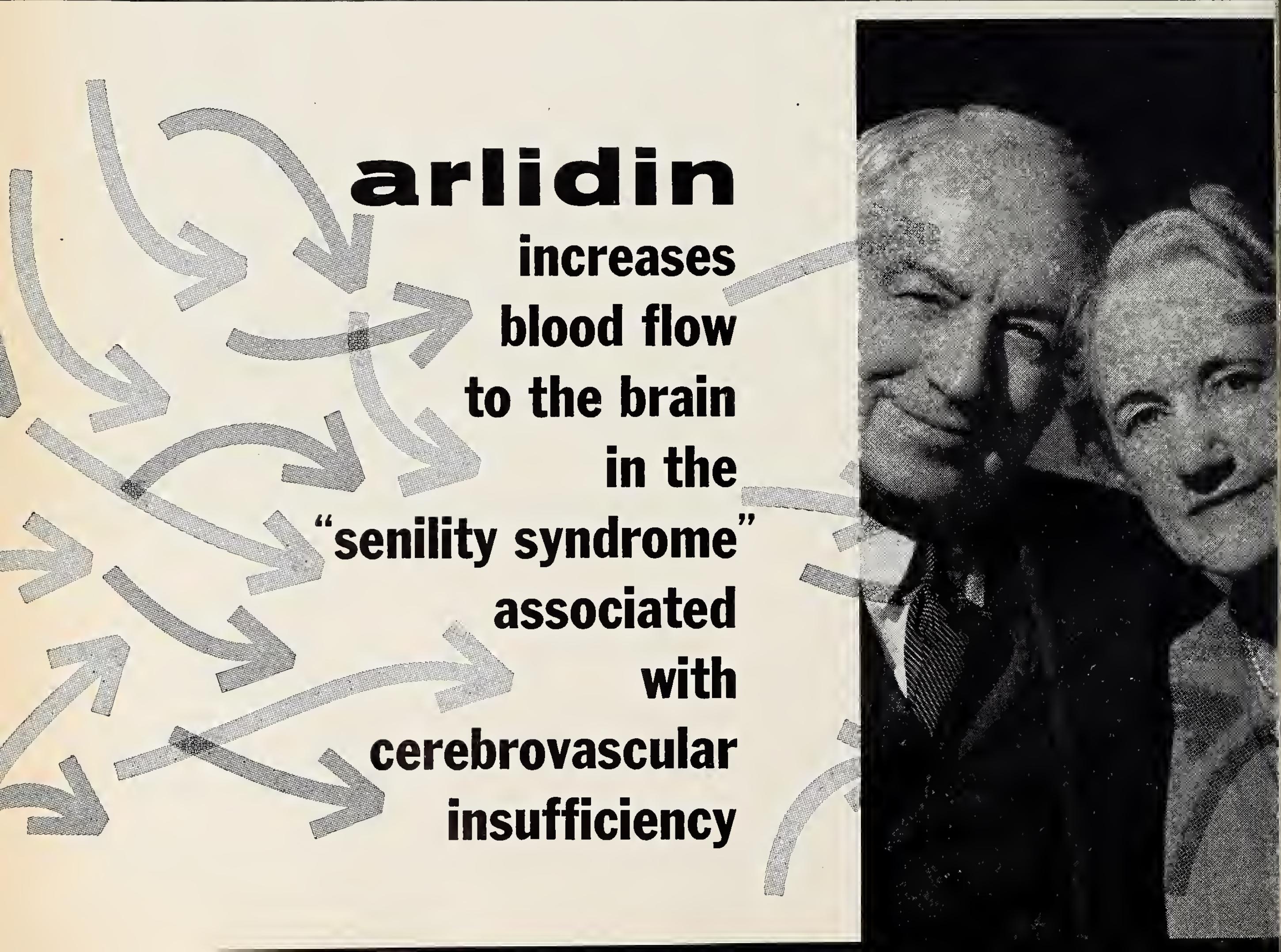
Response of Infants to Pertussis Vaccine at One Week and to Poliomyelitis, Diphtheria, and Tetanus Vaccine at Six Months—N. R. Butler, B. D. R. Wilson, P. F. Benson, J. A. Dudgeon, J. Ungar, and A. J. Beale. Lancet, 2:112 (July 21) 1962.

Infants were given pertussis vaccine either plain or adsorbed onto aluminum phosphate in the first week of life. The agglutinin response was superior with the absorbed vaccine. The two vaccines gave equally good protection against whooping cough in a follow-up study. The paper contains a misprint, for among controls there were 14 cases (not 24 as stated) among 24 home exposures. Children given polio, diphtheria, and tetanus vaccine starting at six months made a satisfactory response to all the components. This schedule is immunologically sound but has the drawback of employing two courses of vaccination.

* * *

Open Door—Ten Years' Experience in Dingleton—R. A. W. Ratcliff. Lancet, 2:188 (July 28) 1962.

Statistics of Dingleton, the only mental hospital in Scotland functioning entirely without locked wards, are compared with those relating to Scottish mental hospitals in general. Quantitative assessment is attempted of (1) risks to the patient (death by suicide and accident), (2) possible embarrassment to the community (escapes and police



charges against patients), and (3) possible gains to the community (numbers of admissions, the proportions of admissions which were voluntary, readmission, turnover, and discharges in selected years between 1945 and 1959). The statistics strongly support the case for continuing open-door administration in a 400-bed mental hospital situated in and drawing its patients from an area of small towns and rural districts.

* * *

HEART SOUNDS AND MURMURS IN 400 NORMAL SUBJECTS—H. N. Segall. Canad. Med. Assn. J. 87:377 (Aug. 25) 1962.

To define the range and the modal pattern of normal heart sounds and murmurs as heard at six "areas of auscultation," data collected on 400 subjects are analyzed. The method of writing quantitative symbols to describe what is heard while listening provides precise records. From data on 100 young men, (aviation pilots) a modal pattern was derived which serves as a standard normal pattern on a heart-sound chart used in writing quantitative symbols for heart sounds and murmurs. Data of the 100 pilots are compared with those of 300 selected "normal" patients and of 4,889 persons in a mixed population of patients. The graphic patterns of heart sounds and murmurs described by quantitative symbols demonstrated the details of normal range and modal pattern.

* * *

SIGNIFICANCE OF SKIN AND SEROLOGIC TESTS IN DIAGNOSIS OF PULMONARY RESIDUALS OF HISTOPLASMOSIS—J. H. Richert and C. C. Campbell, Amer. Rev. Resp. Dis., 86:381 (Sept.) 1962.

In a review of 123 cases of pulmonary histoplasmosis proved pathologically or culturally, it was found that 97 per cent of 117 patients who received histoplasmin skin tests reacted positively. Only 48 per cent of the 73 patients who were tested serologically reacted positively, and most of the positives had low titers. The histoplasmin skin test is valuable in excluding histoplasmosis but the serologic tests have little diagnostic significance in the inactive stage of the disease.

* * *

TRANSMISSION OF RETINOBLASTOMA—R. C. Drews. Arch. Ophthal. 68:329 (Sept.) 1962.

Of 13 siblings studied, three died of retinoblastoma. The 10 who were unaffected had 16 children, and of these three had retinoblastoma.

* * *

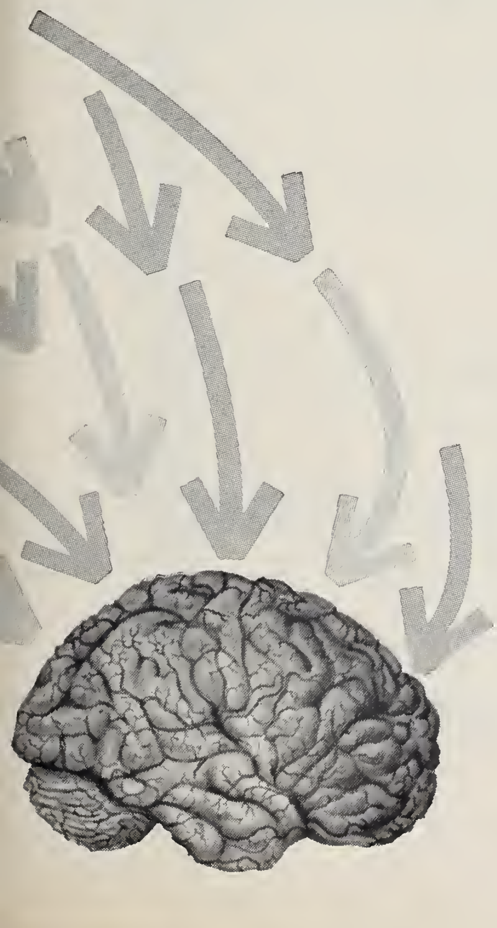
BENIGN AND MALIGNANT ONCOCYTOMA—H. Hamperl. Cancer, 15:1019 (Sept.-Oct.) 1962.

The occurrence of oncocytes in normal organs is due to a special degenerative metaplasia that does not prevent the cells from dividing. Oncocytes may appear in neoplasms as single cells, or they may form a more or less substantial part of the tumor, or the tumor may be composed entirely of the oncocytes. It is only in this latter instance that such tumors should be called oncocytomas (benign or malignant). Examples of such tumors from various organs are given.

* * *

DIRECT RETROGRADE FEMORAL AORTOGRAPHY—J. A. Waldhausen and E. C. Klatte. New Eng. J. Med., 267:480 (Sept. 6) 1962.

A technique of abdominal aortography that is an extension of simple femoral arteriography is described. It clearly outlines disease of the abdominal aorta and some of its branches, including the renal and iliac vessels. Demonstration of the ileofemoral tree of the opposite pulseless extremity may be easily performed. This method has proved to be safe and reliable on approximately 100 patients.



Inadequate cerebral blood flow—often due to cerebral arteriosclerosis—may result in the "senility syndrome" with its pattern of mental confusion, memory lapses, depression, fatigue, apathy and behavior problems.[1-3]

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references: 1. Madow, L.: Penn. M. J. 62:861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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A.M.A. Clarifies Stand on Drug Addict Therapy

The American Medical Association said recently it is *not* opposed to *experimental* ambulatory, or out-patient, clinics for the rehabilitation of narcotic addicts.

The A.M.A. *does* oppose out-patient clinics in which addicts would be given drugs primarily for the maintenance of addiction. It *does not* oppose out-patient clinics that would assist in the care and rehabilitation of addicts.

The A.M.A.'s position on out-patient clinics for addicts has been misinterpreted in two recent magazine articles, Dr. Dale C. Cameron, Washington, D. C., chairman of the A.M.A. Committee on Narcotic Addiction, said.

The development of an experimental facility for the out-patient treatment of drug addicts was endorsed by the A.M.A. in 1959 and re-endorsed in a joint statement with the National Research Council last May, Dr. Cameron said.

To date, no properly controlled experimental facility for the treatment of narcotic addicts has been established, he said.

For this reason, the A.M.A.-N.R.C. statement, referring to general non-experimental treatment services, said "on the basis of current knowledge" ambulatory clinics were opposed, he said.

"Certainly, the report does not preclude future recommendations based on new knowledge gained through research," he said.

Since some out-patient clinic plans call for drug maintenance as in Great Britain, Dr. Cameron cited the 1959 statement which emphasized that "no acceptable evidence whatsoever points to the indiscriminate distribution of narcotic drugs as a method of handling the problem of addiction."

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Injuries Are Main Reason Children Lose Eye

Loss of an eye in childhood is caused by an injury in more than half the cases, according to an article in the September 15 *Journal of the American Medical Association.*

In a study of 402 children under 15 years of age who had an eye removed, 222 (55 per cent) resulted from an injury, Drs. Leonard Apt and L. K. Sarin, Philadelphia ophtalmologists, reported.

The greatest number of these cases occurred between the ages of five and eight, they said. Eighty-one per cent occurred after the age of three, they said. Agents causing the injuries included an arrow, knife, pen, bullet, dynamite, pieces of glass and stone, steel, screw driver, nail, belt, fist, rope. rubber band, and toy airplane, they said.

"It is significant to observe that a sharp increase in the number of cases was found at the age when the child begins to attend school," the two physicians said. "The fact that over one-third of the total number . . . resulting from trauma occur in the first phase of primary school underlines the responsibility which must be met by both parent and teacher during this period of transition in the life and activities of the child."

Safety education aimed at parents and children and legislative control of dangerous items such as fireworks and BB guns already has had an effect on the occurrence of blindness from injury, which is decreasing markedly, they said.

In one community alerted to the danger of eye injuries from toys during the Christmas season, they said, the number of eye losses was reduced by more than two-thirds during that period. Newspaper stories, radio announcements, discussion at Parent-Teacher Association meetings, and school demonstrations of potentially dangerous objects were used in this safety campaign, they said.

"Frequent campaigns of safety education directed at parents, teachers, baby sitters, and toy manufacturers are needed to reduce the number of eye injuries and thus the loss of children's eyes," a *Journal* editorial said.

African Tumor Compares with Leukemia Elsewhere

A commonly occurring tumor in African children may be a different manifestation of the same disease process that causes a common form of acute leukemia in children in the United States, Dr. Gilbert Dalldorf, Sloan-Kettering Institute for Cancer Research, New York City, said recently.

"In both diseases the tumor cell is the same," he said in the September 22 *Journal of the American Medical Association.*

Although the symptoms of the diseases are different, Dr. Dalldorf said, both run a rapid, devastating course and both respond similarly to radiation therapy and to various drugs.

Both diseases represent roughly 40 per cent of all malignant tumors in children in each country, he said, and in both countries boys are more frequently affected than girls.

The disease found in Africa is termed malignant lymphoma since the tumor is made up of lymphoid tissue, tissue which acts as a filter for the watery fluid of the body known as lymph.

Lymphomas in North America and in most of the world are often associated with lymphoblastic leukemia, Dr. Dalldorf said. This type of leukemia, or cancer of blood-forming tissues, is characterized by rapid growth and overactivity of lymphoid tissue.

This type of leukemia is the most common malignancy of children in America and the least common in East Africa, Dr. Dalldorf said.

In a review of 130 lymphomas in children under 15 years of age in Kenya, he said, only 2 per cent were found to be associated with leukemia. In the United States, he said, all but 5 per cent of the lymphomas in children are associated with leukemia.

If both diseases are different expressions of childhood lymphoma, Dr. Dalldorf said, the agents responsible must be assumed to exist in both continents. possibly in somewhat different form or subject to host or environmental factors that modify their characteristics.

"It would seem as important to determine. if possible, why lymphomas in America are usually leukemic as to determine why those in Africa are tumorous and not leukemic," he said.

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Board of Internal Medicine Review, Part II	One Week, Dec. 3
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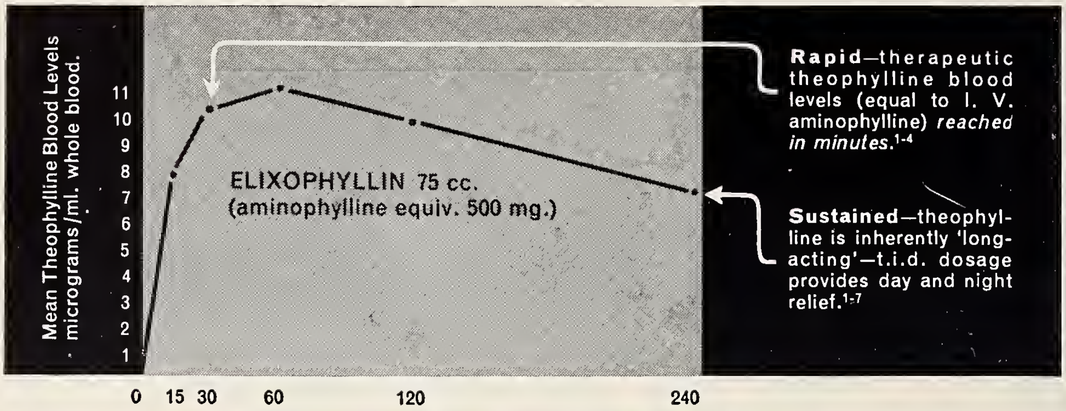

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(Gastric distress rarely encountered.)

References: (1) Kessler, F.: Connecticut S.M.J. *21*:205 (March) 1957. (2) Burbank, B.; Schluger, J., and McGinn, J.: Am. J. Med. Sci. *234*:28 (July) 1957. (3) Spielman, A.D.. Ann. Allergy *15*:270 (June) 1957. (4) Greenbaum, J.: Ann. Allergy *16*:312 (May-June) 1958. (5) Kessler, F.: Medical Times *87*:1298 (Oct.) 1959. (6) Bickerman, H.A., and Barach, A. L., in Modell, W.: Drugs of Choice 1960-1961, St. Louis, The C. V. Mosby Company, 1960, p. 516. (7) Wilhelm, R. E. in Conn., H. F.: Current Therapy—1961, Philadelphia, W. B. Saunders Company, p. 417. (8) Schluger, J. McGinn, J. T., and Hennessy, D. J.: Am. J. Med. Sci. *233*:296, 1957.

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Nationwide Chain of Ear Banks Seeks Inner Ear Bones

A nationwide drive for bequests of the temporal or inner ear bones upon death is under way to aid researchers in the battle against deafness.

The campaign was launched by The Temporal Bone Banks Center in Chicago, recently established as coordinating agency for a chain of 22 ear banks.

The story of the ear banks is told in the October *Today's Health* magazine, published by the American Medical Association.

The ear banks are primarily interested in obtaining the bones of persons afflicted with disorders of hearing and equilibrium. From these bones and the individual's medical history, scientists can determine the pathological conditions that accompany various types of deafness and evaluate the effects of previous treatment.

"There is much yet to be learned about deafness," according to Dr. John R. Lindsay, director of the Chicago center, "not only because there are many types of deafness but because we do not yet know enough about what goes on in the inner ear or about the relationship of the inner ear to the brain."

The donated bones of persons with normal hearing are also sought by the ear banks to aid in the training of ear surgeons. Surgery on the ear requires extraordinary skill which can be acquired only by surgical training on human ear structures.

Anyone interested in willing his ear bones to science may obtain legal forms for making such bequests from The Temporal Bone Banks Center, Box 146, Faculty Exchange, University of Chicago, Chicago 37, Ill.

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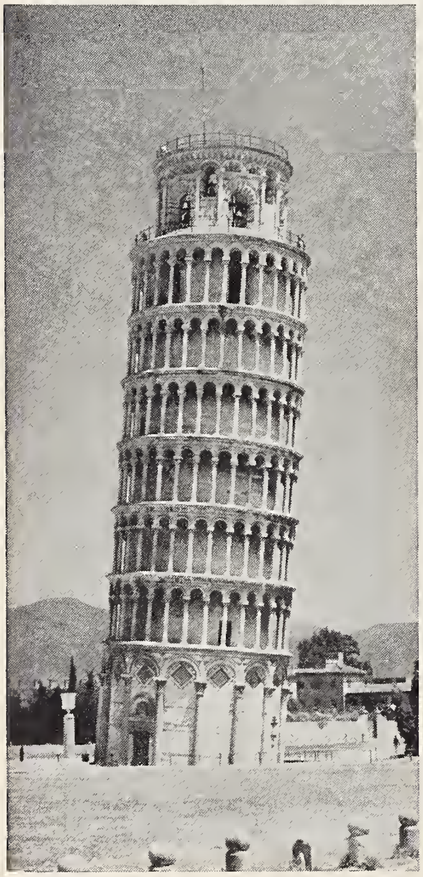
CYTOTOXIC EFFECT OF HETEROLOGOUS LYMPHOID CELLS—A. E. Stuart. Lancet, 2:180 (July 28) 1962.

Heterologous lymphoid cells had a typical cytopathic effect on the monolayers of HeLa cells in tissue culture. Living cells were necessary and immunized cells accelerated the destruction of the monolayers. Heterologous lymphoid cells given to mice with an ascites tumor produced temporary amelioration, but subsequently the tumor progressed in all the treated animals.



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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959*

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Physician's Health Record On Par With Businessman

The average physician's health record is generally on a level with that of the businessman, a study indicated recently.

The conclusion was based on a comparison of periodic health examinations given a professional group of 68 persons, 61 physicians and 7 dentists, and identical examinations given 500 business executives.

Both groups were ostensibly well and middle-aged although the executives were somewhat older.

The study revealed no significant difference between the two groups in either incidence of major, unknown diseases detected by the examinations or per cent of individuals in which these diseases were found, Drs. John C. Sharpe and William W. Smith, Beverly Hills, Calif., reported in the October 20 *Journal of the American Medical Association.*

Previously unsuspected and significant diseases were found in 45.5 per cent of the physician group and in 43.7 per cent of the executive group, the researchers said. Of all diseases found in the physician group, 14.6 per cent were significant compared with 13.4 per cent in the executive group, they said.

The similarity of these figures is understandable since most of the significant diseases had produced no apparent symptoms and therefore were not recognized by either physician or layman, they said.

Diseases were considered significant if they could interfere with the individual's health or shorten his life, they said.

"Not only did the physicians have an equal amount of significant, unknown disease, but many more physicians than executives needed treatment, not only for these new conditions, but also for those known to be present beforehand," the researchers said.

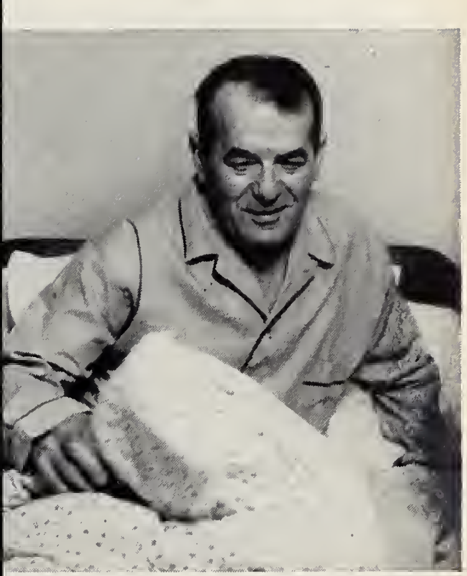
Seventy-two per cent of the significant unknown diseases found in the physicians required treatment compared with 47.7 per cent of these diseases found in the executives, the study showed.

Comparison of the two groups also showed a slightly higher incidence of heart disease and peptic ulcer among the physicians. However, the researchers said, there was no conclusive proof that physicians had any occupational disease.

Re-examinations revealed a slightly higher incidence of newly acquired disease among the physicians than the executives, the study showed.

The Journal report also pointed out that one-third of all important new diseases found among physicians were detected by x-ray examination.

The researchers concluded: "In an effort to detect early, unsuspected, and often major disease, there is no sound reason why a physician should not have a complete and periodic physical, laboratory, and x-ray examination and thereby apply this knowledge to the preservation of his own health."



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Discuss Medical Aspects Of Steam Baths in J.A.M.A.

Steam rooms and Sauna baths appear to have no beneficial effect on health in the opinion of two consultants to the *Journal of the American Medical Association.*

Writing on steam rooms in the question-and-answer section of the October 20 Journal, Dr. David I. Abramson, Chicago, said there are very limited indications for, and many indications against, the use of the steam room.

Generally in such an environment, he said, the temperature varies between 110 and 170 degrees Fahrenheit and the humidity is very high.

There appears to be no beneficial physical response to exposure to a steam room that cannot be accomplished by much less "heroic" means, he said.

The steam room is definitely unwise for those with any serious organic disability, such as generalized hardening of the arteries, heart disorders, or an overactive thyroid, he said. In addition, he said, the high humidity would probably place an excessive load upon the patient with even mild or moderate disability of the heart and lungs.

Discussing Sauna baths, Dr. Kaare Rodahl, Philadelphia, said:

"Although it may be difficult to demonstrate any objective beneficial effect on health and physical performance capacity, the Sauna is generally considered to contribute to a feeling of well-being."

The Sauna is a hot steam bath taken in an enclosed room heated by a stove on which water is sprinkled at intervals. It has been used in Scandinavia, notably in Finland, for centuries, Dr. Rodahl said.

The effects on the heart and circulatory system are essentially the same as those resulting from exposure to heat, he said.

"It is conceivable that some harm could result in older individuals unless care is taken to increase the exposure gradually," he added.

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Boom in Medical Research Neglects Major Aspect

Despite vastly expanded research, an important approach to investigative medicine is being neglected, according to an article in the October 13 *Journal of the American Medical Association.*

The rise of "research factories" is bringing about the decline of the "clinical tradition," Dr. Jurgen Ruesch, professor of psychiatry, University of California School of Medicine, San Francisco, wrote in the Journal.

The clinical tradition implies bedside observation and any kind of observation that deals with living creatures, he explained. It employs only simple instruments, abstains from the elaborate control devices used in experimental laboratory research, and focuses on naturally existing conditions, he said. The vast majority of effective surgical, medical, and psychiatric treatment methods have been developed by individuals or small groups, he maintained.

With the advance of technology, however, emphasis in medicine swung away from clinical observation and measurement toward experimentation. Dr. Ruesch pointed out.

Experimental, or laboratory, research relies upon careful design, well-stated hypotheses, sophisticated theories, control of as many variables as possible, and precise measurement, he said. Measurement may entail expensive equipment, he said, and experiments may require a large personnel.

"As the numbers of people and machines used in research increase, a human organization has to be built to administer, supply, and maintain them," he said. "The result is the emergence of research factories—the laboratories of the pharmaceutical industry, research bodies of the government, and research institutes in the universities."

The invasion of "big science" into universities, he continued, is diverting them from their primary purpose by converting university professors into administrators, housekeepers, and publicists.

A recent survey showed some schools are spending more than five times as much for research as they are for undergraduate medical education, and in some teaching departments the full-time research workers outnumber full-time faculty members by more than 10 to 1, he said.

At the same time, he said, the creation and growth of research centers and institutes are absorbing available scientists and emptying universities of capable men.

The 20-fold increase of funds for medical research in the last 15 years and the emphasis on medical science have introduced new organizational forms and attracted a new type of person into medicine, Dr. Ruesch said.

Administration, research, and practice have become separate disciplines, he said, the result being

(Continued on Page 38)

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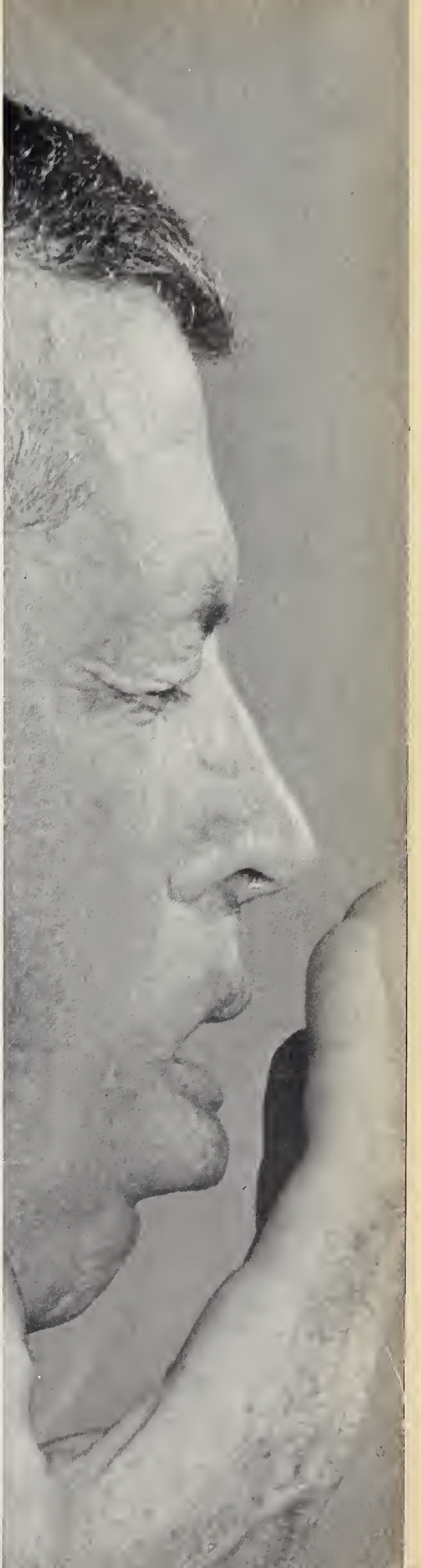

Fecal *p*H in Constipation?

A stool pH of 6 or 5 usually indicates a normal lactobacillus flora and a pH of 7 to 9 is abnormal, indicating a deficiency of lactobacillus – the correlation being about 94%.[1]

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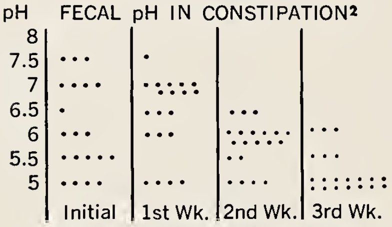

Twenty patients on MALTSUPEX® therapy for three weeks (each dot=1 patient).

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"Stools become soft in all patients. . . ."[3] MALTSUPEX is a dependable preparation.[4] Safe for infants,[5] effective in oldsters[3]—safe and effective in all constipation.

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References: 1. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent. **37**: 24-40 (January) 1962. 2. Calloway, N. O.: Paper to be published. 3. Hootnick, H. L.: J. Amer. Geriat. Soc. **4**:1021-1030 (October) 1956. 4. Bruce, J. W.: Pediat. Clin. N. Amer. **8**:163-165 (February) 1961. 5. Reichert, J. L.: Pediat. Clin. N. Amer. **2**:527-538 (May) 1955.

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New Oral Contraceptive

A new approach to birth control by oral administration of hormones was presented Sunday, October 7, at the tenth annual meeting of the Pacific Coast Fertility Society.

Called "sequential therapy," the new system provides for administration of an estrogen, followed by a combination of the estrogen and a new progestational agent, chlormadinone.

Starting on the fifth day of the female cycle, a fifteen-day course of the estrogen is given. The change to the combination is made on the twentieth day and continues for five days. Withdrawal of the drugs on the twenty-fifth day allows the cycle to begin again, most commonly within the next two to four days.

The new method differs in two respects from conventional fertility-control systems: 1. The progestational agent is given for only five days instead of 20; 2. the effects more closely duplicate the normal conditions of the female cycle.

Chlormadinone is one of the most potent synthetic progestational agents yet discovered.

The estrogen used in the clinical trial studies was mestranol. Other estrogens also are under investigation as possibilities for the sequential therapy.

The report on the estrogen-chlormadinone method was presented by Joseph W. Goldzieher, M.D., of the Southwest Foundation for Research and Education; J. Martinez Manoutou, M.D., and Harry W. Rudel, M.D., of the Syntex Laboratories; and J. M. Maas, M.D., of the Lilly Research Laboratories.

(Continued on Page 42)

Boom in Medical Research Neglects Major Aspect

(Continued from Page 26)

that "we may well breed superb technicians, practitioners, or organizational specialists but not medical leaders who know where the relevant problems are and what to do about them."

Decisions have moved out of the hands of subject matter-oriented professionals into the hands of organization men; and these in turn must trust the newly arisen technical advisors and researchers who know little about medical practice or treatment, he said.

"Materialism and overorganization are about to kill the art of healing," Dr. Ruesch concluded.

"Mediocre research and the concomitant neglect of clinical training . . . have put the population in double jeopardy.

"Scientific knowledge and clinical skill stimulate each other, and unless both are maintained at a high level of competence, progress in medicine may be lagging.

"The progress of medicine depends as much on the physicians who adapt the findings of medical science as on the scientists who engage in research. Both groups should be equally supported, rewarded, and honored."

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Hormone Relieves Infant Spasms

Hormone therapy reduced the frequency of seizures in 52 per cent of 21 children suffering a type of epilepsy associated with physical and mental retardation, medical researchers reported recently.

The patients were given corticotropin, cortisone, or both, J. Gordon Millichap, M.D., and Reginald G. Bickford, M.B., Mayo Clinic, Rochester, Minn., said in the November 3 *Journal of the American Medical Association.*

Corticotropin, secreted by the pituitary gland, stimulates the adrenal cortex, or outer part of the adrenal gland, to produce cortisone.

At the time treatment was begun, the patients ranged in age from one-half month to five years, the researchers said. Fourteen were mentally retarded, they said.

Fifteen of the children were treated with corticotropin alone, two with cortisone alone and four with both, they said. Seizures were reduced in frequency in 11 of the 21, they said.

The study showed that the response of those who received corticotropin was related significantly to the age of the patient at the time treatment began.

In the 19 who received corticotropin, the physicians said, seizures were controlled in 8 of 10 infants less than 1 year of age but only in 2 of 9 children over 1 year of age.

The beneficial effects of hormone therapy appear to be "real" because of a relatively rapid response and because previously administered anticonvulsant drugs were ineffective, they said.

No significant or permanent improvement in the level of intelligence was associated with the treatment, they said.

The mechanism of the anticonvulsant action of corticotropin is unknown, the physicians pointed out. However, they said, it is possible that the basic cause of the seizure disorder is a biochemical abnormality of genetic or acquired origin and a failure of certain enzymes to mature.

Control of the spasms by corticotropin might be due to the stimulating effect on the biochemical maturation of the brain and on the development of enzyme systems that inhibit the seizures, they said.

New Oral Contraceptive

(Continued from Page 38)

The clinicians said that chlormadinone shows a marked and selective progestational effect on the endometrium. It has neither estrogenic nor androgenic properties. In fact, it is an estrogen antagonist. They found the drug to be well tolerated.

Chemically, chlormadinone is 6-chloro-17α-hydroxypregna-4, 6-diene-3, 20-dione acetate.

Spokesmen emphasized that chlormadinone is still under clinical investigation and not ready for general use.

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1 "significant hearing improvement" occurred with Arlidin in 32 of 75 patients with recent onset hearing impairment due to labyrinthine artery ischemia.

Rubin, W. and Anderson, J. R.: Angiology 9:256, 1958.

3 Arlidin "appears to be one of the most satisfactory [vasodilators], having the advantages of minimal side effects, being well tolerated and possessing a sustained action" in improving circulation of the inner ear.

Seymour, J. C.: Laryngology & Otology 74:133, 1960.

Turncoat Antibody Found In Muscular Disorder

Man's natural immunity mechanism, his ability to produce antibodies to counteract invading germs, is being investigated as a possible cause of a muscular disorder.

Autoantibodies, substances which are originally manufactured by the body for protection but turn against their host, have been found to be associated with myasthenia gravis, or fatigue of the muscular system, four researchers at the University of Buffalo School of Medicine, Buffalo, N. Y., reported in the October 6 *Journal of the American Medical Association.*

The cause of myasthenia is not known, but it is believed to result from a functional abnormality in the connection between nerves and muscles.

Previous investigators had found a factor with specific affinities for skeletal muscle in the blood of patients with the disease, according to the *Journal* article.

The Buffalo workers—Ernest H. Buetner, Ph.D., Ernest Witebsky, M.D., Dieter Ricken, M.D., and Richard H. Adler, M.D.—said they found additional evidence that the factor was an antibody and established that it was an autoantibody.

There are actually two autoantibodies that seem to come into play, the authors said.

One antibody acts upon skeletal and heart muscle, they said, while the second type acts only on skeletal muscle. Earlier investigators apparently found only the latter type, they said. Final proof of the existence of these two antibodies depends on further extensive experiments, they pointed out.

A small but increasing number of autoantibodies with an affinity for certain organs are known to occur in association with certain diseases, the authors said. Autoantibodies to heart muscle have been found in cases of rheumatic fever, they said.

Evidence of the presence of antibody was drawn from a comparison of 10 patients with myasthenia and 32 patients with other muscular and non-muscular disorders, the researchers said. Among the 10 myasthenia patients, tests for antibody against skeletal muscle were strongly positive in 2, weakly positive in 3, doubtful in 8 and negative in 2, they said. Among the other 32, they said, no tests were positive, 3 were doubtful and 29 were negative.

It was established by several techniques that both types of antibodies were directed against the patient's own tissues, they said. In one technique, a blood sample from a patient with myasthenia reacted to a biopsy specimen from her own shoulder muscle in the same way it reacted to other human and monkey muscle specimens, they said.

"The mere demonstration of circulating autoantibodies in spite of exquisite specificity has never

(Continued on Page 46)

2

vascular insufficiency
of the labyrinth is an important
etiologic factor in sudden
perceptive deafness...
"vasodilators [Arlidin] are
of considerable value."

Wilmot, T. J. and Seymour, J. C.:
Lancet 1:1098, 1960.

4

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energetic measures to
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Wilmot, T. J.: J. Laryngology &
Otology 73:466, 1959.

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Clinical benefit in approximately 50% of cases of recent onset hearing loss treated with adequate vasodilator and other supportive therapy is also reported by Sheehy.

Sheehy, J. L.: Laryngoscope 70:885, 1960.

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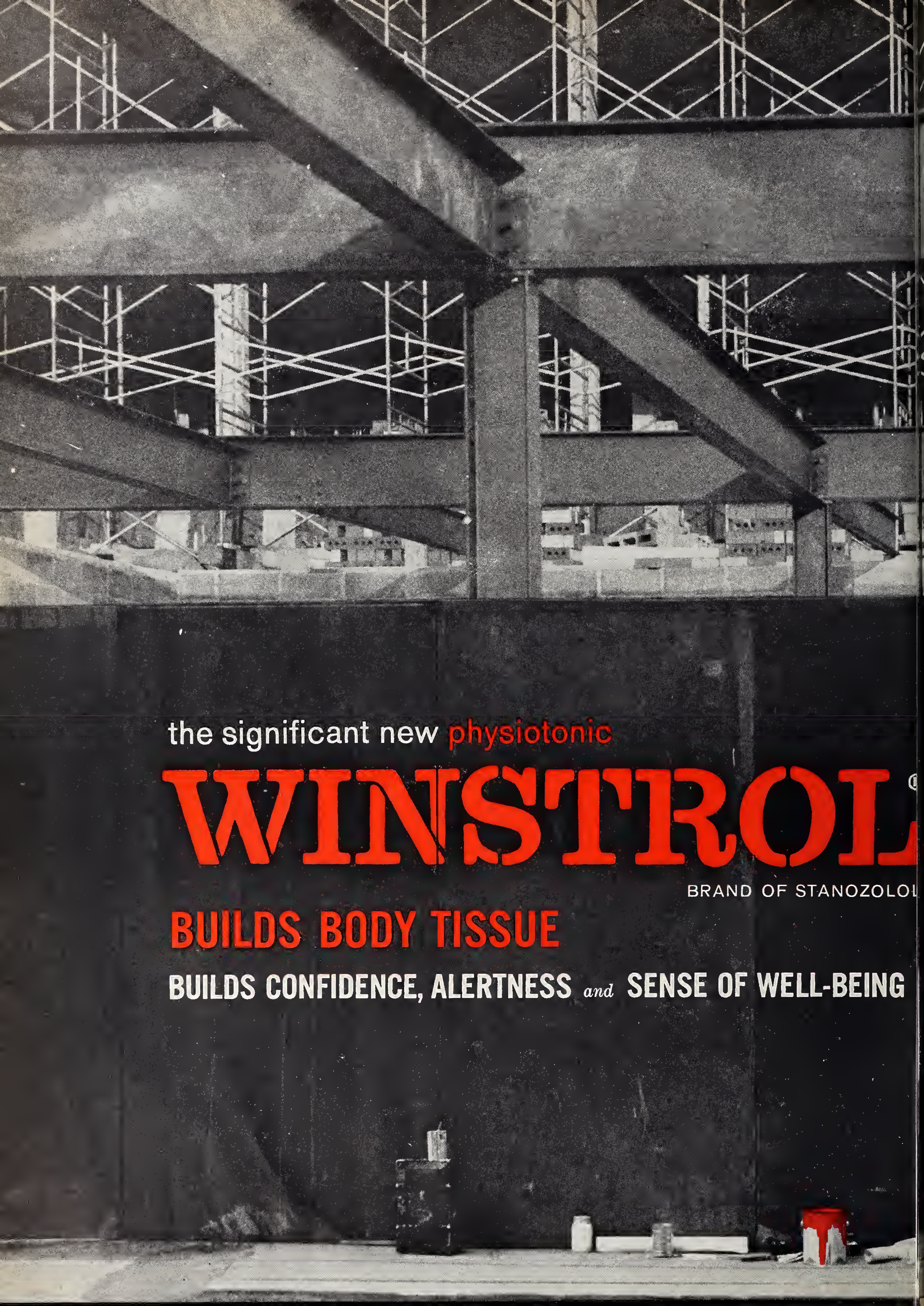
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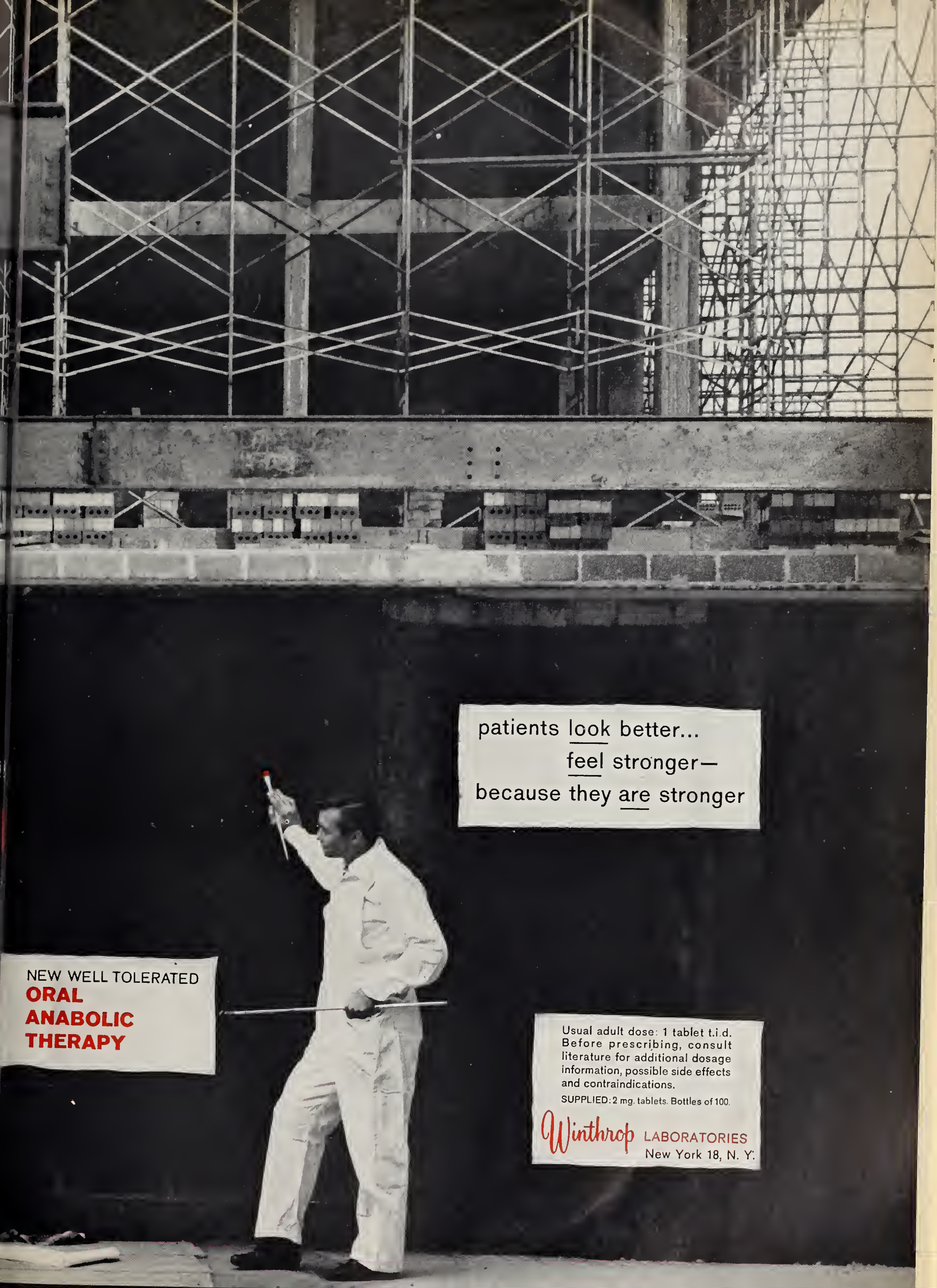

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Fungus Disease Found Often in Eastern U.S.

A fungus disease, histoplasmosis, is probably as prevalent in some of the Middle Atlantic states as in any other part of the country, two researchers said in the October 27 *Journal of the American Medical Association.*

Of 1,924 elementary school children in Frederick County, Md., who were tested to find out whether they had been exposed to the disease-causing fungus, histoplasma capsulatum, 35 per cent had a positive reaction, Henry V. Chase, M.D., Frederick, Md., and Charlotte C. Campbell, B.S., Washington, D. C., reported.

Positive responses occurred in 26 per cent of 917 second graders and in 42 per cent of 1,000 sixth graders, they said.

These figures are comparable to those obtained in studies of similar age groups in some areas of the Ohio and Mississippi River valleys where histoplasmosis has long been known to be highly prevalent, the researchers said.

It is likely that the overall percentage of positive responses in the Maryland county study is even higher, they said, because nonfarm students outnumber farm students, who have earlier and more frequent exposure to possible sources of the fungus in nature, by four to one.

The disease, which causes fever, abdominal cramps and other symptoms, affects the lungs, spleen and liver and may prove fatal. It is generally contracted by adults from fungus-contaminated soil but the exact mode of distribution of the fungus is not understood.

Other recent studies supply growing evidence that a number of the middle eastern seaboard states have areas of very high prevalence of histoplasmosis, the authors said.

"There is no longer doubt that histoplasmosis has a wider distribution than is currently recognized," they said.

Turncoat Antibody Found In Muscular Disorder

(Continued from Page 43)

been considered by us as sufficient proof of the autoimmune cause of a disease," the researchers said. "Additional evidence might be furnished by reproducing the disease in experimental animals by active immunization. . . ."

Even if it is assumed that myasthenia has an autoimmune cause, they added, the triggering mechanism of the immunologic derangement remains unknown.

The disease most often affects the muscles of the eyes, face, neck, throat, tongue, and lips although other muscles may be affected later. It causes a sleepy facial expression and abnormal speech. Drug therapy provides symptomatic relief.

California
MEDICINE
OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION
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Volume 97 DECEMBER 1962 Number 6

Serum Protein Profiles in Coccidioidomycosis

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• Serum protein analysis is a valuable addition to the present methods for evaluating the status of the individual patient with coccidioidomycosis. The albumin protein and albumin glycoprotein decrease and gamma protein increases in relation to severity of infection. In 40 patients with coccidioidomycosis, changes in individual protein fractions could be significantly correlated with conventional laboratory tests, such as the complement fixation test, erythrocyte sedimentation rate and hematocrit.

Changes in the alpha_2 glycoprotein concentration, the erythrocyte sedimentation rate and the hematocrit value appear to be related to the degree of inflammation, while the changes in the gamma protein and the beta_2 glycoprotein appear to be related to the specific antibody response.

COCCIDIOIDOMYCOSIS is usually a relatively benign, self-limited infection. In a few patients, however, the primary pulmonary infection is followed by progressive dissemination that may involve almost any system of the body except the gastrointestinal tract. Because of the ominous prognosis that goes with dissemination, it would be beneficial to have additional objective laboratory tests to evaluate the clinical course and activity of the infection. To explore one possibility, the authors measured the inflammatory process of 40 patients with coccidioidomycosis, using the new electrophoretic and immunochemical techniques now being developed (gamma globulins, alpha_1 and alpha_2 protein and glycoprotein), and compared the results with those of complement fixation and skin tests with coccidioidin and with the results of conventional laboratory tests.

METHODS

The subjects were 40 consecutive patients admitted to the Kern County General Hospital, Bakersfield, with the diagnosis of coccidioidomycosis. These patients, 30 men and 10 women, represented a fairly typical cross-section of those seen in a county hospital in an endemic area. Their disease, on the basis of its clinical activity, could be divided into four classifications: primary pulmonary infection (nine patients); benign residual coccidioidal lesions of the lungs or pleura (four patients); chronic dissemination (23 patients); and meningitis (four patients, one with additional dissemination elsewhere, and another with a resolving benign lung lesion).

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Submitted July 30, 1962.

In addition, the patients were grouped according to the physician's clinical estimate of the severity of infection into those with "mild" (14 patients), "moderate" (17 patients), and "severe" (nine patients) disease. Placement into one of these groups was made largely on the patient's general appearance and clinical course, without consideration of any laboratory data.

CONVENTIONAL LABORATORY METHODS AND RESULTS

Coccidioidin, a filtrate of liquid cultures of Coccidioides immities, is used for the various tests to measure the status of the disease, such as the skin test, precipitin test and complement fixation test.*

In a "positive" skin test, coccidioidin injected intradermally produces a delayed reaction that is read after 24 and 48 hours. This indicates that the patient has, or has had, an infection with Coccidioides immitis. Almost all patients will have a positive skin reaction after the third week of their infection. Repeated testing does not sensitize the patient's skin to the antigen, nor does it result in a rise in the complement fixation or precipitin titers. The skin sensitivity cannot be passively transferred.[10] Patients with primary infection and erythema nodosum usually show pronounced hypersensitivity upon skin testing.[14] When dissemination occurs, skin reactivity may decrease or disappear. Sensitivity to skin testing does not rule out dissemination, but indicates rather that the individual patient may still possess significant resistance to the infection.[14]

All patients in this study were skin tested. If the result of the first skin test (1:100 strength) was negative, a second test with 1:10 strength was done. Of the 40 patients, 17 had positive reaction with the 1:100 strength, seven with the 1:10 strength, and 16 were negative with both strengths. With increased severity of disease, the skin responses were less distinct. Of the 23 patients with dissemination in this series, four were positive to 1:100 strength, seven were positive to 1:10 strength but not to 1:100, and 12 were negative to both strengths.

The precipitin test is useful in establishing the diagnosis, but it has little prognostic significance. Precipitins usually appear in the serum after the skin test becomes positive, but disappear after three or four months.[11,12] The complement-fixing antibodies, if they subsequently appear, develop more slowly than the precipitins. A rising titer usually indicates the infection is of progressively increasing severity, while regression usually means the infection is waning. A persistently high titer suggests the possibility of chronic dissemination. The complement fixing antibodies do not seem to offer the patient any protection from the infection. Complement fixation tests were performed on all 40 patients in this study. There appeared to be less reactivity to the skin test in those patients having the higher complement fixation titers.

In this series, the authors considered those patients with coccidioidal meningitis as a separate group because they felt that the skin test and the complement fixation titer did not accurately indicate the prognosis when meningitis is present. The complement fixation test may be positive in a low titer and the skin test may be strongly positive, while the opposite may be seen in other forms of dissemination. Isolated meningitis can occur without evident involvement of other systems, as a result of early seeding of the meninges during the acute pulmonary infection.

Other blood tests that are clinically useful in prognosis and objective evaluation of the infection include the leukocyte count, the eosinophil count, the hematocrit value and the erythrocyte sedimentation rate. Leukocytosis roughly indicates the severity of the primary infection, but it has questionable significance with regard to dissemination. Eosinophilia may be associated with erythema nodosum, which is considered a favorable prognostic sign, but on the other hand, high eosinophil counts may be observed in prolonged pulmonary infiltration and may herald dissemination of the infection.[3]

The complement fixation titer, erythrocyte sedimentation rate and mean hematocrit value were all significantly different in the three categories grouped by clinical estimates of severity of infection. The complement fixation titers and erythrocyte sedimentation rates progressively increased with severity of infection, but there was considerable overlap of the values from group to group. There was relatively little difference between the hematocrit values of the patients with "mild" disease and those with "moderate" disease. The lowest hematocrit values were usually associated with severe infection, and the authors found almost no overlap between the hematocrit values of the patients with "severe" infection and those patients with "mild" or "moderate" infection.

C-reactive protein was significantly associated with a progressive increase in severity of infection. Only two of fourteen patients with "mild" disease had positive reaction, while 18 of 26 patients with "moderate" or "severe" infections had positive reaction.

Progressive infection is frequently associated with increased globulin and decreased albumin in the serum. Simple chemical determinations of these proteins have been used empirically by some clinicians as aids in evaluating the severity of the disease. For example, in another study, the serum albumin and globulin levels were determined in 25 cases of dis-

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*References 1, 2, 5, 8, 10.

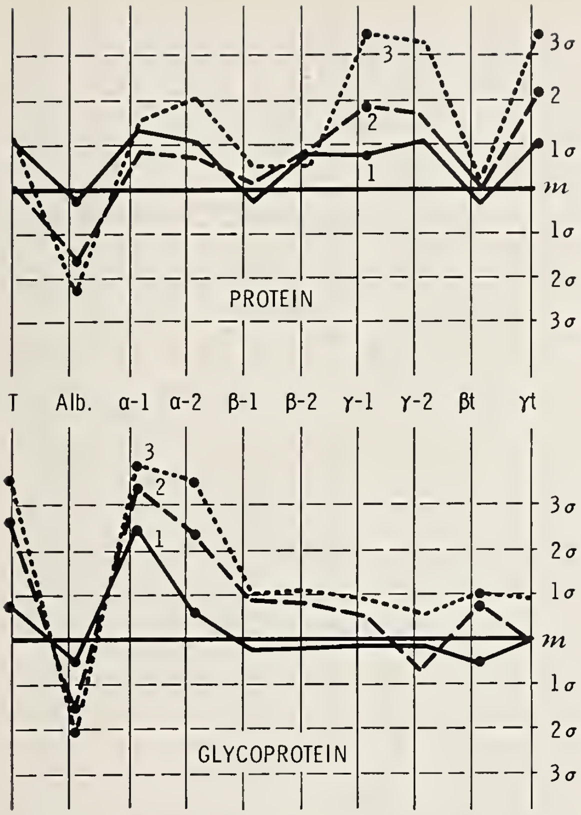

Chart 1.—Mean serum protein profiles (absolute content of patients with relatively "mild" (1), "moderate" (2), and "severe" (3) coccidioidomycosis. Normal mean (m) and standard deviation (σ) indicated by horizontal lines.

seminated coccidioidomycosis before and after amphotericin-B therapy.[7] Before treatment, the mean albumin level was 3 gm. per 100 cc. in these patients, and the mean globulin level was 3.9 gm. per 100 cc. After three months of therapy, the mean albumin level had risen to 4 gm. per 100 cc. and the mean globulin level had fallen to 2.8 gm. per 100 cc.

IMMUNOCHEMICAL METHODS

Serum was stored at –10° C. and remained in a thawed state for not more than 24 hours before use in testing. Total serum proteins and glycoproteins were determined by the methods of Weimer and Moshin.[13] Serum electrophoretic patterns were determined with the Spinco system,[9] using the periodic-acid-Schiff stain and the Model RB Analytrol for quantitation. C-reactive protein levels were determined by a quantitative gel-diffusion technique.[4]

The absolute protein and glycoprotein content in each electrophoretic fraction was computed from the product of the total serum concentration and the relative per cent of total migrating in the individual electrophoretic fractions.

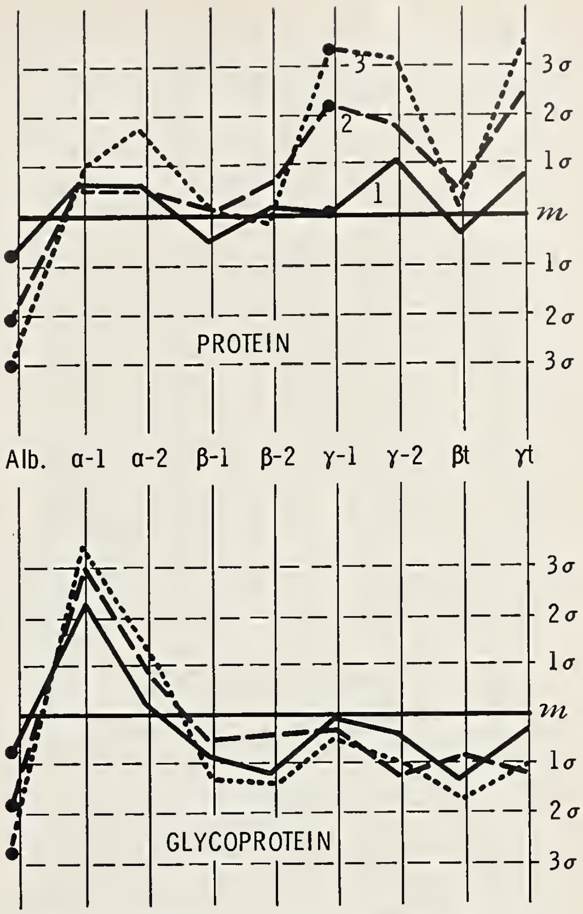

Chart 2.—Mean serum protein profiles (relative per cent) of patients with relatively "mild" (1), "moderate" (2) and "severe" (3) coccidioidomycosis. Normal mean (m) and standard deviation (σ) indicated by horizontal lines.

IMMUNOCHEMICAL RESULTS AND COMPARISONS

Relationship of Electrophoretic Fractions to Severity of Infection

Serum protein fraction concentration showing significant differences related to progressive increases in severity of infection include the following: the total serum glycoprotein, gamma$_1$ protein, alpha$_1$ glycoprotein, total beta-glycoprotein, albumin protein and albumin glycoprotein. However, there were no significant differences in the electrophoretic patterns of glycoproteins when judged only by their relative per cent distribution, except for a progressive increase in the per cent migrating in the albumin fractions with increasing severity of infection. The electrophoretic patterns of the proteins, however, showed significant differences with respect to the per cent which migrated as gamma$_1$ protein and albumin. With increasing severity of infection, there was a progressive increase in the per cent migrating as gamma$_1$ protein, and a progressive decrease in the per cent migrating as albumin. (See Charts 1 and 2.)

Correlation of Electrophoretic Fractions with Clinical Tests

Both the absolute and relative concentrations of albumin and gamma_1 protein showed significant correlations with the complement fixation titer and the erythrocyte sedimentation rate, and to a lesser degree, with the hematocrit. Both the absolute and relative concentration of the alpha_2 fraction showed a significant positive correlation with the sedimentation rate, a negative correlation with the hematocrit value, and no significant correlation with the complement fixation titer.

The total serum glycoproteins showed a significant correlation with the complement fixation titer and the sedimentation rate, but not with the hematocrit values. Most of this increase was due to smaller increases in the alpha_2 and beta_2 glycoprotein electrophoretic fractions. The hematocrit correlated positively with the absolute and relative concentration of glycoprotein in the albumin electrophoretic fraction, but not with that in the alpha_2 fraction.

Relationship of Serum Protein Profiles to the Clinical Type of Disease

There were no characteristic serum protein profiles for the various clinical types of disease. In the four patients with meningitis, there was little alteration of the protein patterns, although there were significant increases in the alpha glycoproteins. Two of these patients, however, also had lesions outside the central nervous system (pulmonary in one, osseous and cutaneous in the other). The four patients with solitary benign pulmonary or pleural lesions showed relatively normal patterns for proteins and glycoproteins, except for increases in alpha_1 glycoprotein. Alpha glycoprotein increases are associated with inflammation, and these increases may indicate continued active inflammation in these patients.

DISCUSSION

Of the laboratory tests currently used in the management of patients with coccidioidomycosis, it is generally thought that the complement fixation test offers the best guide to the severity of the infection. Even when this test is readily available, however, there is always need for additional objective and independent laboratory tests to aid in the management of coccidioidomycosis. The serum protein profile, when judiciously interpreted in the light of other clinical and laboratory data, is a valuable additional measure of the severity of the infection.

Unlike the results of complement fixation test, the abnormalities of the serum protein profile have no diagnostic or etiologic specificity. The available clinical evidence indicates that the total serum glycoproteins, particularly those of the alpha_1 and alpha_2 fractions, primarily reflect inflammation. It is widely thought that the increases in the gamma proteins, and possibly the beta_2 proteins, reflect to some extent antibody formation. However, recent studies have demonstrated considerable physico-chemical and immunological heterogeneity of these fractions, and it is likely that, in patients with very high values, only a relatively small portion of this fraction would consist of specific antibodies to Coccidioides, when considered gravimetrically.

The data of this study suggest that variations in the complement fixation titer, erythrocyte sedimentation rate and hematocrit value possibly reflect different patho-physiologic phenomena. The complement fixation titer, presumably a direct measurement of specific antibody response, shows a significant correlation with the absolute and relative concentrations of gamma globulin which is consistent with an antibody response. It is assumed that the negative correlation with albumin is due primarily to the non-specific decrease in this fraction observed in most severe infections or inflammatory diseases associated with the indirect nutritional effects on the serum proteins.

The correlation of the sedimentation rate with the alpha_2 protein and glycoprotein fractions is less easily explained. Increases in the sedimentation rate have been attributed to increased fibrinogen, globulins and haptoglobulins. Previous studies of serum protein profiles in other infectious and inflammatory diseases demonstrated a correlation between the alpha_2 protein, particularly the alpha_2 glycoprotein fraction, and the degree of inflammation.[6] Assuming this relationship exists in coccidioidomycosis, the erythrocyte sedimentation rate would appear to correlate with the degree of inflammation as well as with the antibody response.

The hematocrit was relatively normal in the patients with "mild" or "moderate" infections, with relatively little depression until the infection was "severe." There was also relatively less correlation between the hematocrit and the protein electrophoretic fraction. The relative concentration of the albumin and alpha_2 glycoprotein fractions, however, showed a closer correlation.

The physician's clinical estimate of the severity of the infection correlated closely with many of the objective laboratory determinations. The value of the hematocrit in estimating severity of infection is limited somewhat by the lack of a significant decrease until the infection has become extensive. The small overlap of values of patients with "severe" infections and those of patients having "mild" and "moderate" infections indicates a relatively high degree of specificity.

The complement fixation titer showed more variation due to severity of infection than did the erythrocyte sedimentation rate. The increase in these two measurements was also progressive through all three clinical categories, indicating their value in detecting dissemination following the primary infection. The complement fixation titer appears to be the more reliable of the two, because of its specificity and possibly its greater sensitivity. However, it is difficult to perform and is not widely available; and the erythrocyte sedimentation rate will usually be the more useful as a routine test in clinical management, with the complement fixation test used only at monthly or bi-monthly intervals.

Testing for C-reactive protein, which is never found in the serum of healthy patients and is usually associated with clinically significant inflammation, may sometimes be useful in the clinical management of patients with coccidioidomycosis. Most patients who had extensive pulmonary or extrapulmonary disease had C-reactive protein in their serum, while those with mild infections usually did not. The principal limitation of this test is its nonspecificity, in that it may also be positive due to inflammation from causes other than coccidioidomycosis.

The applications of serum protein analysis in the clinical management of coccidioidomycosis requires more extensive evaluation, particularly extended serial studies in individual patients. It compared favorably in this cross-sectional study with other methods for estimating the extent of disease. It is more easily standardized than the complement fixation test, but lacks its diagnostic specificity. The main value of the serum protein analysis will probably be as an additional, independent and objective laboratory test which may be clinically useful in measuring the response of the host to his disease.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the valuable assistance that was given in this study by Charles E. Smith, M.D., University of California School of Public Health, Berkeley; J. Walter Wilson, M.D., University of California School of Medicine, Los Angeles; Marjorie Biddle, Ph.D., Los Angeles County General Hospital; and Norman Levan, M.D., University of Southern California School of Medicine, Los Angeles.

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Single-Dose Treatment of Enterobiasis

Use of a New Piperazine-Senna Preparation

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• A preparation combining piperazine and senna was clinically tested among 31 families in which at least one member was found to be positive for enterobiasis by the customary cellophane-tape anal smear technique. The diagnostic smears were positive for 58 of those tested. Following a single dose of piperazine-senna mixture, all patients were cleared of the infestation as determined by the customary criteria for cure. In six patients in two families, reinfestation occurred in two to three months after the first administration. All were again cleared with one dose of the mixture.

Side effects were insignificant and transient. One 4-year-old child vomited, but an hour later ingested a second dose without incident. The preparation was palatable and easily administered.

PINWORMS are commonly encountered in pediatric practice. In a study of pinworm infestation in San Francisco some years ago an incidence of 29 per cent in boys and 34 per cent in girls was noted.[10] In a more recent investigation of infestation in children in a housing development for married ex-servicemen studying at the University of California at Los Angeles, the incidence was 43.3 per cent.[11] Several other studies[2,7,10] suggest that a 30 to 40 per cent incidence is common among white children in various parts of the country.

It has generally been considered that pinworm infestation is relatively harmless and, except for pruritus ani, largely asymptomatic. Recently, however, in a report of a ten-year study, Litter[5] cited instances of a number of rather severe pathological consequences of enterobiasis, the variety implicating the fields of dermatology, gastroenterology, gynecology, neurology, proctology, psychiatry and others. As far as we have been able to observe, symptomatology has been limited to pruritus, irritability and restlessness, anorexia, insomnia, abdominal pain and excoriations of the anal, perianal and rectal areas. Prolonged insomnia and irritability can, of course, result in behavioral difficulties, and anorexia can cause physical damage.

Until the advent of piperazine less than a decade ago, pinworm therapy was a comparatively uncertain undertaking. Piperazine quickly emerged as the drug of choice because of its efficacy and relative lack of toxicity. Even with this drug, however, there is the problem of administration on seven successive days, a rather cumbersome procedure, particularly with young children. Currently, pyrvinium pamoate, a cyanine dye, is employed and is effective in a single dose. It does cause vomiting in some young patients, however, and the dye stain presents problems, particularly since its appearance in the stool creates alarm even among some previously-warned parents.

According to recent reports in the literature,[3,9,12] a new preparation combining time-tested piperazine and standardized senna has proved effective in treating enterobiasis with a single dose and without significant side effects. Presumably, the piperazine acts by narcotizing the worms, and the senna flushes them out before they can recover.[12]

METHOD AND MATERIALS

All members of thirty-one families, in which at least one member was found to be positive for enterobiasis by the usual modified National Institutes of Health scotch-tape smear technique, were administered the new piperazine-senna preparation* in palatable chocolate-flavored granular form. Early in the study, in an effort to determine the optimal procedure, patients were given varying instructions concerning the time of administration. In the latter stages, the patients were directed to take the preparation before or at breakfast. They were told they could take it directly from a spoon or in milk or on cereal. All were instructed to record reactions at the time of ingestion and subsequent bowel movements. They were given dated slides and scotch-tape, and instructed in the technique of anal smears. Starting on the eighth day after treatment, these were taken on six consecutive mornings before bathing or wiping the anal areas. A seventh posttreatment smear was taken in the office by the investigator on the morning after the sixth smear. All pretreatment diagnostic smears were administered personally by the investigator, and all slides,

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Submitted July 10, 1962.

*Pripsen Granules, supplied by the Medical Department of The Purdue Frederick Company, New York, N. Y.

pretreatment and post-treatment, were examined by the investigator.

For children up to six years of age the dose prescribed was one level teaspoonful of the mixture, each teaspoon containing 1 gm. of piperazine phosphate and the standardized concentrate of 450 mg. of senna pods. For children of six to eleven years the dose was two teaspoonfuls, and for adults four teaspoonfuls. There were no children older than 11 years.

For purposes of the study, only patients with positive pretreatment smears were included in the results. If all seven post-treatment smears were negative, the treatment was evaluated as successful.

RESULTS

A total of 58 patients, including 54 children from 6 months to 11 years and four adults, had positive diagnostic smears. The ages of the 54 children averaged 4 years, with seven under one year, 22 from 1 to 3 years, 19 from 4 of 8 years, and six over 8 years. Of the children, 33 were female and 21 male. The adults included two couples, one with three children and the other with four children positive for enterobiasis. Eighteen of the 58 had no symptoms. In 21, the only symptom was pruritus. Other symptoms—singly, or combined with pruritus or with one another—included severe irritability and restlessness, anorexia, insomnia, abdominal pain and pronounced lethargy. Physical findings included excoriations in the anal, perianal and rectal areas. Worms were seen only in one case.

All 58 patients were evaluated as cured* with a single dose of the preparation. In six cases, however, there was reinfestation from two to three months later initially manifested in a recurrence of pruritus. Two of the six were siblings who had had positive smears before treatment, and the other four were the parents and two out of four siblings of another family, all of whose members had had positive smears the first time. In each case, a single dose of the preparation again resulted in eradication of the pinworm. Counting only those who had positive smears before treatment, there were thus 64 separate administrations of the piperazine-senna pod mixture, all of which resulted in eradication of pinworm infestation following a single dose.

In 35 of these 64 cases there were no side effects whatever reported, and in another 24 the only effects were transient looseness of bowels or slight and transient cramps. In none of these 24 cases were the side effects of any significance. Three other patients had cramps, but all of them had complained of intermittent cramps before the study. One other patient, a mother, said she thought she had cramps but that they might have been psychologically induced by the instructions. One patient, a 4-year-old boy, vomited on first administration of the preparation. An hour later, he ingested a dose without difficulty. There were no cases of true diarrhea and none in which hydration was affected—an important safety consideration where young children are concerned.

There were 68 members of the 31 families in the study who had negative diagnostic smears. All were given the medication in the same manner as those with positive smears. All of them still were negative on post-treatment examination with seven successive daily anal smears.

COMMENT

In this study, the piperazine-senna combination appeared to have medical characteristics approaching those recently described as ideal for enterobiasis therapy[8]: the effective cure rate was 100 per cent; it was non-toxic in the doses given, and both piperazine[1] and senna[4] are reported to be non-toxic in large doses; it was palatable and easily administered; and its efficacy with a single dose makes it suitable for mass administration to family groups and institutional populations.

Its palatability made it considerably more acceptable than has been our experience with pyrvinium pamoate or piperazine alone—an advantage particularly in treatment of young children. Although side effects were minimal as compared with pyrvinium pamoate, it appears in retrospect that the incidence of minor cramping and loose stools might have been lessened by a reduction in dose for children of 3 years and under, without loss of efficacy. Two-thirds of the patients who had these side effects were in this age group. All received a teaspoonful of the preparation. It was also our clinical impression that there was far less cramping reported by patients who were administered the test material in the morning, before or at breakfast.

The single-dose effectiveness of the piperazine-senna preparation simplified administration enormously in comparison with piperazine alone. Although none of the studies carried out by other investigators with this preparation achieved 100 per cent cure with the one dose, as ours did, they did demonstrate a high degree of efficacy—ranging from 93.3 per cent[3] to 97 per cent.[9]

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**Cured* is here used to mean cleared of evidence of infestation as determined by the scotch-tape smear technique.

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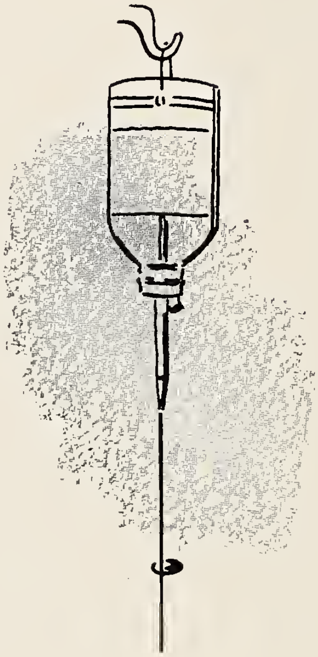

Viral Hepatitis

A Study of Hyperbilirubinemia with Acholuria in Convalescence

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• In 42 patients convalescing from viral hepatitis, the total and 1-minute serum bilirubin levels were measured on the day bilirubin was first demonstrated to be absent from the urine.

The levels of total bilirubin ranged from 0.5 to 6.2 per 100 ml. of blood (mean 2.8 mg.), while the levels of the 1-minute bilirubin ranged from 0.3 to 3.3 mg. per 100 ml. of blood (mean 1.5 mg.).

The reason for acholuria in the presence of the elevated 1-minute direct van den Bergh measurements is not clear, but may be due to the failure of the van den Bergh reaction to accurately measure the exact concentrations of free and conjugated bilirubin present in the plasma.

EARLY IN THE COURSE of viral hepatitis, bilirubin may appear in the urine before an increase in the total or 1-minute bilirubin level in the blood.[3] On the other hand, Watson[6] pointed out that during the late defervescent stage of infectious hepatitis, bilirubinuria may be absent in the presence of surprisingly high levels of total and 1-minute serum bilirubin.

The study here reported was made in order to further document the relationship of serum and urine bilirubin levels during the defervescent stage of viral hepatitis and to attempt to correlate the 1-minute and indirect bilirubin levels in the blood with the disappearance of bilirubin from the urine.

METHODS

Forty-two patients with acute viral hepatitis were the subjects of this study. Four were presumed (from clinical history) to have serum hepatitis, and the remainder infectious hepatitis. All patients were in hospital during the course of the study. The diagnosis of acute viral hepatitis was based on history, clinical and biochemical features. As soon as the diagnosis of acute hepatitis was ascertained, the first morning urine specimen was examined daily for bilirubin. The Ictotest,®* which is sensitive to 0.05 mg. of bilirubin per 100 ml. of urine,[2] was used for the daily qualitative urine bilirubin determinations. On the first day that a negative result by the Ictotest examination was obtained, a specimen of blood was then taken for determination of the 1-minute direct and total bilirubin by the van den Bergh reaction. On the succeeding day, the urine was again examined for bilirubin. In no instances did bilirubinuria reappear at that time, although in a few instances mild relapses with bilirubinuria did occur some days later.

RESULTS

The results of the serum van den Bergh reaction on the day the urine was first free of bilirubin (as determined by the Ictotest) are recorded in Table 1. Twenty-seven of the 42 patients (64.3 per cent) had 1-minute direct-acting serum bilirubin levels which equaled or exceeded the indirect value at a time when the urine was free of bilirubin. Moreover, 11 of the 42 patients (26 per cent) had a 1-minute serum bilirubin greater than 2.0 mg. per 100 ml. Thirty-eight patients (90.5 per cent) had a total serum bilirubin greater than 1 mg. per 100 ml., and in the remaining four cases the 1-minute direct fraction was abnormally elevated, averaging 68 per cent of the total.

DISCUSSION

Neefe and Reinhold demonstrated bilirubin in the urine in 75 per cent of a group of patients with early, developing infectious hepatitis when the 1-minute direct bilirubin was less than 0.25 mg. per ml. of blood.[3] In marked contrast, in the current study of patients convalescing from viral hepatitis, the urine was free of bilirubin although the 1-minute direct measurement invariably exceeded 0.3 mg. per 100 ml. of blood and ranged as high as 3.3 mg. per 100 ml. In fact, the mean level of 1-minute direct bilirubin associated with acholuria was 1.5 mg. per 100 ml. of blood. It should be noted, however, that there was considerable variability in the blood levels of total and 1-minute direct bilirubin at which acholuria first appeared. It is apparent that there is no predictable level of either fraction at which acholuria can be expected in convalescent viral hepatitis.

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Submitted May 21, 1962.

*A simplified test for determination of bilirubin in the urine. Material supplied by Ames Laboratories.

TABLE 1.—*Results of Bilirubin Determinations in 42 Patients Convalescing from Viral Hepatitis*

Case No.	Total Serum mg. per 100 ml.	Indirect mg. per 100 ml.	1-minute van den Bergh mg. per 100 ml.	Per Cent Direct
1.	2.8	0.9	1.9	67.8
2.	5.3	2.8	2.5	47.2
3.	6.2	3.4	2.8	45.2
4.	3.5	1.5	2.0	57.2
5.	1.3	1.0	0.3	23.1
6.	3.8	1.6	2.2	57.9
7.	4.2	1.7	2.5	59.5
8.	1.8	0.9	0.9	50.0
9.	2.5	1.2	1.3	52.0
10.	3.1	1.5	1.6	51.6
11.	3.3	1.9	1.4	42.4
12.	0.7	0.3	0.4	63.0
13.	3.7	1.9	1.8	48.7
14.	4.4	2.3	2.1	47.7
15.	2.3	0.6	1.7	73.9
16.	4.4	2.5	1.9	43.2
17.	2.0	1.0	1.0	50.0
18.	2.5	1.0	1.5	60.0
19.	5.8	2.5	3.3	56.9
20.	4.1	1.8	2.3	56.2
21.	1.4	0.5	0.9	64.3
22.	0.7	0.3	0.4	57.2
23.	2.4	1.2	1.2	50.0
24.	5.0	2.2	2.8	56.0
25.	3.2	1.8	1.4	43.8
26.	1.3	0.8	0.5	38.5
27.	2.0	1.1	0.9	45.0
28.	1.5	0.9	0.6	40.0
29.	3.7	1.6	2.1	56.8
30.	1.9	0.9	1.0	52.6
31.	2.2	1.3	0.9	40.9
32.	2.9	1.4	1.5	51.7
33.	2.7	1.4	1.3	48.3
34.	2.1	0.5	1.6	76.2
35.	2.1	0.5	1.6	76.2
36.	2.9	1.5	1.4	48.3
37.	3.1	1.3	1.8	58.1
38.	1.6	0.8	0.8	50.0
39.	0.8	0.4	0.4	50.0
40.	0.5	0.0	0.5	100.0
41.	2.8	1.4	1.4	50.0
42.	5.0	2.7	2.3	46.0
Mean	2.8	1.3	1.5	54.0
Standard deviation	±1.41	±0.73	±0.74	±12.6

Current concepts of bilirubin metabolism imply that only bilirubin in a conjugated form escapes into the urine.[4] Bilirubinuria, then, should be expected whenever the level of conjugated bilirubin in the plasma exceeds the "renal threshold." The results of this study are difficult to explain in the light of these concepts.

The possibility that the "renal threshold" for conjugated bilirubin is altered during the course of viral hepatitis seems unlikely. On the other hand, neither our data nor those of Watson[6] suggest that the injured liver in the convalescent phase of hepatitis has become diminished in its efficiency for bilirubin conjugation. On the contrary, in the present study the direct 1-minute fraction averaged 54 per cent of the total serum bilirubin in the convalescing hepatitis patients.

Possibly conjugates of bilirubin other than glucuronides—conjugates that are less readily excreted into the urine—are formed during the course of viral hepatitis. On the other hand, due to the complex kinetics of the van den Bergh reaction, the direct 1-minute fraction cannot be taken as an exact measure of the concentration of conjugated bilirubin. Brodersen,[1] in a study of the velocities of the phases of the diazo reaction, showed that serum with a reaction velocity like that obtained with free bilirubin may give as much as 30 per cent direct bilirubin in the routine van den Bergh procedure. In the routine van den Bergh procedure, the total bilirubin is estimated after the addition of an accelerator, alcohol, which allows the free bilirubin to come into solution and react with the diazotized sulfanilic acid. The possible presence of other hydrophilic substances in plasma with solubilizing properties similar to those of alcohol has been mentioned.[5] It is possible that such substances collect in the plasma during the course of viral hepatitis, distorting the results of the van den Bergh reaction in the convalescent phase of the disease.

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Indications for Operation in Glaucoma

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• Prompt surgical operation is indicated in angle-closure glaucoma and in infantile glaucoma. Open-angle glaucoma is properly considered a disease for which conservative treatment should be tried.

Operation is indicated in open-angle glaucoma when, despite maximal medical therapy, the intraocular pressure reaches a level at which the optic nerve is going to be damaged. Many factors must be considered in making a decision as to whether or not to operate in such circumstances, among them the condition of the eye, the result of previous operation if one has been done, the reliability of the patient with regard to carrying out a prescribed regimen, the age and physical condition of the patient, perhaps the race of the patient, the presence of cataracts and the attitude of both patient and surgeon toward surgical treatment.

SURGICAL OPERATION for glaucoma is indicated when, despite maximal medical therapy, the intraocular pressure reaches a level at which the optic nerve is going to be damaged, but putting that simple principle into practice can be one of the most vexing problems in ophthalmology. There are some conditions in which the indications can be stated positively and other conditions in which no clean-cut decision can be made. It is the purpose of this paper to present some of the criteria which are useful in reaching a reasonable decision.

The two types of glaucoma in which the indication for operation is nearly absolute are infantile glaucoma and angle-closure glaucoma. Rarely is true infantile glaucoma spontaneously resolved; most patients not successfully operated upon lose their sight. Inherent in the diagnosis of infantile glaucoma is a recommendation for prompt goniotomy.

In angle-closure glaucoma with pupillary block there is also an almost absolute mandate to operate. The mechanism of relative pupillary block which results in most primary angle-closure glaucoma is well understood. It is also accepted that iridectomy permanently protects the eye from further attacks of angle closure. The situation is almost unique in that truly curative surgical operation is possible if it is performed before permanent peripheral anterior synechia or trabecular damage has been produced. Therefore, iridectomy is indicated in any case of angle closure as soon as pressures can be brought into normal range by medical treatment. Even if only one eye is affected, prophylactic iridectomy probably should be done in the other.

There are few absolutes in medicine, and qualifications to the rule for iridectomy immediately come to mind. Exceptions depend to a large degree on the gonioscopic findings. If the angle opens to a full grade 2 when miotic drugs are given, the need for operation is less urgent. A patient who is elderly or in poor health, or who has strong objections to surgical operation, may be maintained by drug therapy provided he is reliable about taking drugs as prescribed.

The narrower the angle, the more imminent is angle closure, and the more urgent the need for iridectomy. When properly performed, peripheral iridectomy is as safe as any intraocular operation can be, taking into account the final qualification: the surgeon must be highly skilled.

Indications for operation in chronic open-angle glaucoma are not as clear-cut as for the angle-closure form. Operation does not cure open-angle glaucoma. Often, reducing tension is accompanied by decreased visual acuity due to corneal changes, chronic iritis or lens opacity. When one adds to this the fact that about 25 per cent of filtering operations are unsuccessful, it is easy to see why ophthalmologists prefer to control pressures medically if possible. Operation is obviously indicated when consistently high intraocular pressures are associated with cupping of the disc and progressive changes in the visual field. There are many other cases in which the decision can be made only by the careful evaluation of many factors. The factors to be considered are as follows:

Optic disc. A healthy, pink disc with no cupping is a most favorable finding. It is believed that such a nerve will withstand increased pressures longer than will a cupped disc. In all cases, discs should be diagrammed or photographed so that changes in cupping with the passage of time can be recognized. The more severely cupped and atrophic the optic nerve head, the more urgent is the need to normalize the intraocular pressure.

Field changes. Progressive changes in the visual field in the presence of tension elevation are usually

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Presented before the Section on Eye at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

considered reason for operation. One must be sure that the changes are actual and not the result of changes in technique of examination, in technicians, in test object or in lighting, and that they are not due to intraocular complication such as cataract formation, retinal detachment or retinal disease. Miosis of the pupil produced by the strong miotic drugs will sometimes exaggerate an existing field defect. It is also wise to correlate the apparent field change with the appearance of the optic disc. A pronounced field defect in the presence of a healthy, pink disc casts doubt on the accuracy of the field examination.

Tension. The higher the tension the more certain it becomes that damage to the nerve is going to occur. With normal discs and fields, tensions even up to the level of 40 mm. of mercury may be tolerated. However, most ophthalmologists become increasingly alarmed as tensions go above 30 mm. If the optic disc has already been damaged, operation should be performed promptly if the pressure runs above 24 mm. or there is the least sign of progression of disc or field changes.

In terminal glaucoma the field may be limited to the few degrees around fixation. Obviously, any further progression of the field defect will extinguish macular vision. For determining when operation must be done in such circumstances, reliance must be placed on the tension elevations. If pressures are consistently running between 24 and 30 mm. of mercury (Schiotz), it is wise to do a filtering procedure on one eye, then on the other if the result is favorable. If there is but one eye, it is wiser not to operate unless the tension is frequently above 30 mm. of mercury (Schiotz). Surgical intervention risks macular hemorrhage or edema, which may result in total loss of central visual acuity. As a rule, however, an eye of this description will tolerate operation.

Narrowness of the angles. Narrowness of the angles is seldom a problem in open-angle glaucoma. In a few cases, however, there may be an angle so critically narrowed that the use of strong miotic agents or epinephrine entails risk of angle closure. Such a situation may require surgical intervention. Even if a filtering operation fails, the accompanying iridectomy permits a more energetic medical regimen.

Reliability of the patient. Operation is indicated in those patients who are mentally, physically or psychologically unable to carry out the disciplined therapy necessary for medical control of open-angle glaucoma.

Age and physical condition of the patient. In pre-presbyopic patients, the severe blurring of vision caused by miotic agents often results in irregular use of the drops and ineffective therapy. Although the optic nerve in the young seems to be more resistant to damage, any loss that does occur in them is the more alarming because of their long life expectancy. The younger the patient, the more probable it is that operation will become necessary.

The elderly are often more understanding of the nature of chronic illness and of their personal responsibility in maintaining visual function. Hence for the most part they accept a medical regimen with more determination and tolerance. If operation becomes necessary, it seems to be more likely to result in a filtering bleb because of the paucity of subconjunctival connective tissue and decreased reactivity of the tissues. On the other hand, there is an increased risk of postoperative cataract formation.

The race of the patient. Most surgeons believe that filtering operations are less likely to be effective in the Negro race than with Caucasians or Orientals.

Presence of cataracts. The presence of lens opacities is frequently a complicating factor in glaucoma. In angle-closure glaucoma it is almost a welcome finding, for removal of the lens deepens the anterior chamber and widens the angle if peripheral anterior synechias have not formed. In this way one procedure cures the glaucoma and restores vision.

In open-angle glaucoma, a filtering procedure is likely to result in rapid progression of pre-existing lens opacities. Furthermore, if the glaucoma operation is successful its filtration may be spoiled by subsequent cataract removal. Therefore, in general it is better to remove a cataract before a glaucoma operation is performed if vision is less than 20/50 and tension is not consistently above 35 mm. of mercury.

Previous Operation. There is an ophthalmologic maxim, "As the first eye goes, so goes the second." When good filtration develops in one eye after operation, the outlook for a favorable result in the other eye is improved. Conversely, if good filtration is not brought about by a technically well done procedure, the case for medical treatment is strengthened.

Attitude of the patient and of the surgeon. Of all the imponderables, the attitudes of the patient and of the surgeon are the most difficult to assess. There is no doubt that operation is undertaken much later on patients who are reluctant to undergo the procedure than on those who welcome it. The surgeon's attitude is often influenced by the success or failure of his most recent filtering operations rather than by a dispassionate evaluation of the facts.

COMMENT

The present concept of angle-closure and infantile glaucoma as surgical diseases, and of open-angle glaucoma as a medical disease, seems to be well founded. A note of caution should be sounded, however: Sometimes the eyes of a patient with open-angle glaucoma are permitted to lose function while the patient is being treated with miotic agents, carbonic anhydrase inhibitors and epinephrine in various proportions, combinations and timings. This exploratory use of the medical agents is legitimate but should be completed promptly. It takes only a few days to determine whether or not a given combination is effective. The urgency with which the search should be pursued depends on the severity of the intraocular pressure and the vulnerability of the optic nerve.

It is unfortunate that no test exists by which the threat to optic nerve function can be assessed. There is good evidence that one important factor is insufficiency of the vascular supply to the nerve. Following this lead, some promising research is being done by Harrington[2] at the University of California, and Drance[1] at the University of Saskatoon. By use of an ophthalmodynamometer or a Kukan suction cup, the intraocular pressure is increased until a Bjerrum's scotoma is produced. If further experience confirms that permanent nerve damage is imminent when this scotoma is produced at low intraocular pressure levels, the surgeon will be able to choose more precisely the proper time for filtering operations.

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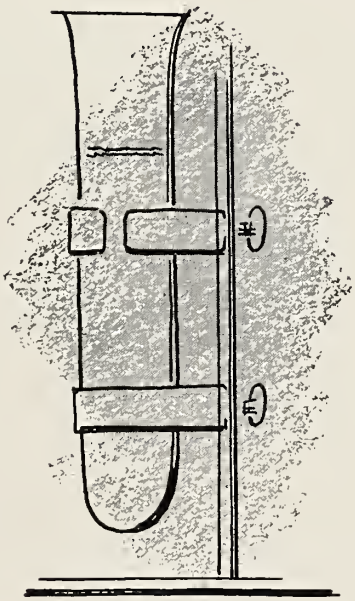

Psychiatric Aspects of Psychomotor Epilepsy

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• Psychomotor or temporal lobe epilepsy is a frequently missed diagnosis. It is often confused with grand mal and petit mal epilepsy. At times it is the first symptom of an organic neurological disease. It is often masked as a psychiatric disorder or is associated with a mental illness without clinically detectable seizures.

These psychic manifestations simulate all of the neuroses and major psychiatric states. Excitement states with amnesia may lead to violent antisocial behavior. All these manifestations may be aggravated by alcohol.

Thalamic epilepsy shows itself in similar psychiatric manifestations and accounts for behavior disorder in children more than temporal lobe epilepsy. Atypical seizures with vegetative or emotional aura and a characteristic electroencephalogram differentiate it from temporal lobe epilepsy.

Proper understanding of the varied manifestations, with positive electroencephalographic findings, leads to the correct diagnosis in most cases. All patients with unusual or atypical personality or psychiatric-like states should have careful electroencephalographic examination. Anticonvulsant therapy and other psychiatric treatment procedures can relieve most cases. Surgical therapy sometimes is necessary.

FOR GENERATIONS neurologists and psychiatrists have recognized certain psychiatric disorders associated with epilepsy. Peculiar clinical episodes without convulsive seizure have been called psychomotor epilepsy.

Hughlings Jackson, whose name has been attached to focal seizures, described the syndrome fully and related psychomotor attacks to temporal lobe lesions. With the increased knowledge through electroencephalography, showing a predominance of temporal lobe involvement, the term *temporal lobe epilepsy* is now used to designate the syndrome.

Of all the forms of epilepsy, this one is the least understood. Undoubtedly epilepsy goes unrecognized in a large number of cases because the patients have mental symptoms only. Such cases may not all be of the psychomotor type. Unrecognized epilepsy may show itself as irascible temperament or feelings of hostility and surges of hatred without overt seizures. Or the patients may have difficulty in adjusting to life situations, occupations or social relations, their behavior in a way often resembling the schizoid pattern. Anxiety reaction in the form of terrifying dreams, nightmares, peculiar fears, queer head sensations, with apprehension and panic without adequate psychogenesis may be a manifestation of epilepsy. All persons acting paranoid, with uncontrollable temper outbursts, should have electroencephalographic examination to rule out seizure discharges. Such persons may have learned that if they get into an argument they become violent. Also, ingestion of alcohol may provoke uncontrollable outbursts of temper.

Some epileptic persons have an associated psychiatric disorder also—sometimes described as hysteroid-epilepsy or as "epileptic personality." Although the psychiatric disorder is independent of the epileptic process, it is more likely to appear in patients with temporal lobe epilepsy. It will not respond to anticonvulsant treatment alone. Other treatment measures—drug therapy, psychotherapy or even electroshock treatments—may have to be used to clear the psychiatric disorder, while the epileptic state may also require treatment.

Physicians generally seem not to be aware that persons with epilepsy have spells that are like neurotic, manic-depressive or paranoid reactions. For example, many epileptic persons drink to excess to escape from emotional tension and yet after a small amount of alcohol become transiently psychotic. Others—those with character disorders, for example—are just hard to live with, cannot get along with people and often insult others. Aimless emotional reactions of that kind, even in the absence of seizure history, warrant electroencephalographic examination, for often the psychic equivalents of epilepsy or temporal lobe epilepsy may be the cause. Fully half of persons with difficult behavior problems, often with a history of delinquent tendencies in childhood, have abnormal electroencephalograms similar to those in epilepsy.

Probably 17 per cent of all epilepsy is of the temporal lobe type, and 50 per cent of the patients have serious psychological or mental disorders. Most of the epileptic persons who are admitted to mental hospitals have psychomotor epilepsy.

One or more of following clinical symptoms is present in classical temporal lobe epilepsy: auditory, olfactory or visual hallucination, experiential illusions, macropsia, micropsia, *deja vu* phenome-

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Presented at Omaha-Midwest Clinical Society, Nov. 1, 1961.

Submitted April 20, 1962.

non or automatic movements, and mental confusion with semipurposeful activity.

Electroencephalography before or during attacks shows spike activity and slow waves of 4 to 6 per second with a focus in the anterior temporal areas, spreading to other areas and, in severe cases, bilateral. Often these can be activated by hyperventilation sleep recording, by photic stimulation or by administration of pentylenetetrazol (Metrazol®).

One must be sure the electroencephalographic information is accurate. Some machines are defective and some technicians not skilled, not recognizing artefacts or normal sleep patterns and interpreting them as convulsive records.

Closely allied to temporal lobe epilepsy is thalamic or hypothalamic epilepsy.[2] Atypical seizures occur. usually preceded by sensory, emotional or vegetative aura suggesting thalamic onset of discharges. The seizures take the form of unconsciousness of 30 seconds or more without convulsive movement followed by drowsiness and, frequently, head pain. The electroencephalogram shows 14 per second and 6 per second positive spikes. Vegetative symptoms also are a feature—gastric aura, abdominal pain, flushing, sweating, shivering or palpitation. Psychiatric symptoms occur in 60 per cent of cases. attacks of rage being the most frequent, usually without complete unconsciousness although partially amnesic. In children this pattern is more frequent than the psychomotor or temporal lobe pattern.

DIAGNOSTIC CRITERIA

Psychomotor or temporal lobe epilepsy is frequently confused with other seizure states. Aird,[1], in a comprehensive study of 204 patients, observed that incorrect clinical diagnosis had been made in 83 per cent who had been treated for grand mal or petit mal epilepsy. The most common source of error was the neglect of finding of a temporal lobe firing point in the electroencephalogram and the next most common was the confusion of minor and brief temporal lobe spells with petit mal epilepsy. Brief psychomotor spells which show as a lapse of contact with the environment resemble petit mal spells. Other points of confusion were psychiatric disorders and neurologic conditions, such as behavior disorders in childhood, and migraine and cerebral neoplasms. Several diagnostic criteria help differentiate temporal lobe epilepsy from other forms. Usually a family history of epilepsy is lacking. Long standing cases are usually from brain damage at birth or later. Hyperactivity, hypersensitivity, introspection, temper tantrums and irritability are common characteristics. Against this background the patient usually has atypical spells, too prolonged for petit mal. with impaired consciousness, including periods of confusion, as well as episodes of dreamy states and automatism.

The aura when present is diagnostic—uncinate taste and smell, hallucination and *deja vu* phenomenon, followed by automatism, bizarre motor activity or a mild tonic fit. The patient appears confused; he may seem to recognize the physician but does not reply to questions or merely mumbles; he seems anxious, has repetitive actions, fumbles with clothing, handles objects or writes. The actions are purposeless or inappropriate. The patient is ambulatory, or if seated he may get up, move about or start to undress and if resisted may meet force with force or even violence. Excessive activity resembling psychotic excitement states, with amnesia, may occur. Careful electroencephalographic records, with stimulation to activate latent cases, as previously described, provides material for positive diagnosis in about 90 per cent of cases. If the electroencephalogram is normal but attacks are typical, the patient should be treated as having temporal lobe epilepsy.

PSYCHIATRIC DISORDERS CONFUSED WITH EPILEPSY

Behavior disorders in both adults and children may be of epileptic origin. The electroencephalogram is the deciding factor; if it clearly displays seizure discharges, the condition is presumably epileptiform. Many patients, in addition to psychomotor seizures, have periods of moodiness, negativity, bad temper and increased irritability, even destructiveness.

A child may commit antisocial acts without purpose—set fires, steal, run away, display temper tantrums or have fits of screaming, crying or breathholding to the point of unconsciousness. Many behavior disorders occur in children with brain damage from trauma at birth, from high febrile states, from encephalitis or blows to the head. Schwade, and Geiser[4] made electroencephalographic studies of 100 patients (age 18 months to 16 years) with severe behavior disorders characterized by extreme aggressive or violent reactions. Seventy-three per cent of them showed 6 to 14 per second spiking confined to one temporal and the occipital areas, with spread to the opposite side. It was felt this activity originated in the thalamic area. These cases fit best into Gibbs' classification of thalamic epilepsy.

Sarvis[3] described the case of a boy with violent outbursts associated with neurotic-like behavior. For some time he was treated as having a psychogenic disorder. Finally a diagnosis of organic brain syndrome, with electroencephalographic evidence of a focal lesion in the right temporal lobe, was made. Decided improvement was noted when an anticonvulsant drug was given. After four years, treatment was discontinued and, when last examined some two years later, the patient seemed normal.

The adult patients have mood shifts, from sweet to sour, or may become abusive—worse under alcohol—or may have spells in which they just act queerly or are simply "not themselves." Irritations that arouse only resentment to normal persons may excite an epileptic patient to mania. Automatic movements that are part of the seizure pattern often are erroneously considered to be hysterical. Impairment of consciousness is the essence of most epileptic seizures; amnesia, partial or complete, is evidence of unconsciousness. Other manifestations in the adult may be dream states; fits of emotional reaction, pleasure, depression, fear or compulsive laughter. Hypnagogic states are twilight episodes between sleep and awakeness. A sense of unreality, inability to orient oneself to time or place, fragmentary thoughts, *deja vu*—all are subjective psychic attacks due to disturbance in consciousness and may be called dizzy spells by the patient.

MEDICOLEGAL ASPECTS OF TEMPORAL LOBE EPILEPSY

Many horrible crimes are attributable to epilepsy. Patients susceptible to automatism fugues or in states of amnesia may react with extreme violence at the least frustration. This tendency may be activated by alcohol.

Electroencephalographic studies by Thompson and Marinacci[5] upon psychomotor epileptic patients after alcoholic indulgence showed activation of seizure discharges from the temporal lobe. Persons of that order have committed crimes such as robbery, murder and manslaughter. The ingestion of alcohol lowers the threshold to a degree which varies between subclinical seizure and actual convulsion.

The observations are of extreme importance in fixing responsibility in medicolegal cases. The syndrome has been called acute alcoholic psychosis of the pathological intoxication type. Investigators believe they have established correlative evidence between psychopathic personality, pathological intoxication and psychomotor epilepsy. The three disorders seem to be variations of the same fundamental cerebral disturbance. While persons with this disorder under the influence of alcohol are totally irresponsible for their acts, they may not be so considered by judges and juries. Courts have not accepted alcoholic intoxication *per se* as an excuse for criminal behavior.

The following case illustrates the problem. The patient was sent to us for evaluation by the court because he had brutally murdered his sister. A grand mal seizure had been observed while he was held in jail.

The patient was a 31-year-old American Indian. A significant part of his history was of a drinking problem for eight to ten years. Nocturnal spells described as breath-holding attacks and frequent, almost daily momentary blackouts had occurred since he was 21. He described one attack of passing out while in an automobile and of coming to poorly clad, outside the car, while attempting to push it. He had been told by companions that he had had a generalized convulsive seizure after a drinking episode.

The patient had been arrested in a cheap hotel after a prolonged drinking bout for murder of his sister in a very brutal fashion. His story was a disconnected account of drinking with his sister in and out of bars, over a period of about 48 hours, getting into a fight and being found by police officers with blood on his clothing. When accused of the crime he confessed he must have committed it, but later denied it and claimed he couldn't remember what had happened.

Upon examination, flatness of affect and complete lack of insight into the seriousness of his predicament were noted. His psychological status was characterized by severe cultural, educational and intellectual limitations and schizoid character defects, but with no evidence of organic disease.

An electroencephalogram showed generalized dysrhythmia with spike activity, aggravated by Metrazol®—a typically epileptic pattern.

This patient had grand mal and petit mal epilepsy under the influence of alcohol. After a seizure he had confusion, amnesic state and automatism for hours, perhaps longer, and committed murder with no memory of the act. Despite this medical evidence of irresponsibility the patient was sentenced to life imprisonment. He died within a year of unknown cause.

DRUG THERAPY OF TEMPORAL LOBE EPILEPSY

The goal of successful drug therapy of temporal lobe epilepsy should be to render the patient free of seizures. A symptomatic treatment, it largely depends upon the right choice of drugs for the kind of seizure in each case. Of first importance is to properly identify and classify the type of seizure or seizures into grand mal, petit mal, psychomotor or combinations of one or more types.

Phenobarbital alone or combined with dephenyl hydantoin is the most useful and least toxic in grand mal epilepsy, but is not usually effective in petit mal or psychomotor cases. Drugs of the oxaxelidine series (Paradione® and Tridione®) are only useful in petit mal. Unfortunately they may be toxic and the patient must be watched very carefully for side effects.

Psychomotor epilepsy has not responded as well to drug therapy as have the other forms, but some degree of control is obtainable. No single drug is satisfactory. Phenacemide (Phenurone®) is the most effective drug but often has dangerous toxic reactions such as aplastic anemia and liver disease. Nausea and anorexia are warning signs and liver function tests must be done at frequent intervals. Primidone (Mysoline®) is useful in some cases but often cannot be taken because of unpleasant side effects such as nausea, drowsiness and dizziness. It is best to start with very small doses (0.125 gm.) and gradually work up to tolerance of 1 to 2 gm. over a period of two weeks.

Methsuximide (Celontin®) in 0.3 gm. capsules up to four times a day is effective in both petit mal and psychomotor epilepsy and is relatively free from side effects. Some observers consider it the drug of choice in psychomotor states. Some patients become resistant to certain drugs, or the type of their attacks changes. The least toxic drugs such as methsuximide or brimidone should be tried first, singly to start with, then in combination if necessary. Phenacemide can be reserved for use if these measures fail. In refractory cases it may be necessary to try various combinations in order to bring the seizures under control. There is need for much research to find less toxic drugs for the management of psychomotor attacks.

In certain cases where the psychomotor attacks are alleviated but disturbing emotional or behavioral difficulties persist, the addition of tranquilizing drugs may help.

Phenothiazine can be employed to reduce fear, hostility or sexual unrest, even though it lowers seizure threshold and can produce seizures. In childhood behavior disorders, meprobamate or librium combined with anticonvulsant drugs may be helpful. Reserpine has also been successfully used in conjunction with anticonvulsant drugs, especially in patients with migraine-like headaches. In certain cases stimulating drugs such as amphetamines, dextroamphetamine sulfate and caffeine may be indicated to counteract the lethargic effects. Occasionally in hyperkinetic children these drugs are of value when anticonvulsants alone are not effective.

SURGICAL THERAPY

In cases where drug therapy fails and the electroencephalogram, possibly with pneumoencephalographic evidence, indicates a focal lesion of the temporal lobe, surgical exploration and removal of the area from which abnormal discharges occur should be carried out. Drug therapy in smaller dosage will have to be continued even after surgical removal of focus, but usually with greater effectiveness in preventing seizures. Operations of this kind are best carried out in a clinic that has developed teamwork between the neurosurgeon and the electroencephalographer.

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Pulmonary Operations in Emphysematous Patients

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• Although emphysema itself is a disease of the entire lungs and so is not amenable to surgical therapy, there are many conditions in emphysematous patients in which surgical operation can be quite helpful—for example, some complications of emphysema and some conditions not etiologically related to emphysema but affecting the lungs. Among these conditions are infectious diseases (pneumonia, bronchiectasis, tuberculosis and infected bullae) and other conditions such as spontaneous pneumothorax, the presence of space-occupying bullae and carcinoma.

The surgical treatment required may range from suction or drainage to wide resection.

PULMONARY OPERATIONS may greatly benefit emphysematous patients of two categories—those with complications of emphysema and those who have co-existing disease requiring surgical treatment. (See Table 1).

Emphysematous patients have low pulmonary reserve. An infection which interferes with an already small amount of ventilation may be most significant, for patients with emphysema have difficulty in raising secretions, and as secretions accumulate they cause more interference with ventilation and also prevent healing of the infection. Respiratory acidosis and coma may result although physical examination and x-ray films may give little indication of so large an accumulation. In some instances, tracheal suction, bronchoscopy and especially early tracheostomy may be lifesaving.

Localized bullae may become infected and require drainage. Open or closed methods may be necessary if they cannot be adequately drained through the bronchial tree. Resection may be necessary in order to eliminate the infection or the site of a possible recurring infection.

Bronchiectasis in a portion of the lung of an emphysematous patient may cause recurring infection. Resection of the bronchiectatic segments may greatly help the patient.

Localized bullae sometimes progress to large size and interfere with ventilation by occupying space and compressing functioning lung. These should be removed. Occasionally a bulla may become a tension cyst due to air-trapping and cause an acute emergency. If the patient is in poor condition, placing a Monaldi drainage tube may be helpful. Suction over a long period may cause scarring and clinical obliteration of the cyst.[1]

Since emphysematous patients have little pulmonary reserve, spontaneous pneumothorax may be a very dangerous lesion. The lung tends to continue leaking because of poor structure. Tension pneumothorax is more likely due to air-trapping mechanism. Prompt thoracostomy and placement of a large tube is indicated. This is normally done in the patient's hospital room, using local anesthesia. A Trochar is not used because of the large size required (No. 40 Malecot). Thoracentesis is unsafe because of the lack of respiratory reserve, the tendency to continue leaking air and the possibility of needle injury to an easily damaged emphysematous lung. Tube thoracostomy rapidly expands the lung and keeps it expanded so long as the tube functions satisfactorily. Use of more than one tube, and replacing or relocating blocked tubes, may be required. When the lung cannot be expanded by tubes, thoracotomy is indicated for resection of bullae, for freeing of adhesions to allow the lung to expand evenly and fill the thorax, and for suturing of major leaks.

TABLE 1.—*Summary of Indications for Pulmonary Operations on Emphysematous Patients*

	Operation
Generalized emphysema	None generally accepted
Surgical lesions	
Complications of emphysema:	
Infection:	
Pneumonia (no reserve)	Tracheal suction Bronchoscopy Tracheostomy
Infected bullae	Drainage (open or closed) Resection
Bronchiectasis (focal infection)	Resection
Localized bullae (space occupying)	Resection,[2] Monaldi[1]
Spontaneous pneumothorax	Thoracentesis (rarely, if ever) Tube thoracostomy Resection of bullae
Coexisting lung disease	
Carcinoma or tuberculosis	Resection with lung conservation Adjunctive measures

Emphysematous patients may have co-existing lung disease such as carcinoma or tuberculosis. Resection of the lesion with conservation of as much

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Submitted August 1, 1962.

of the lung as possible, should be carried out if circumstances permit. Bronchoplasty may help preserve necessary lung.

When operation is indicated in an emphysematous patient, supportive measures such as tracheal suction, bronchoscopy, and particularly tracheostomy, are often required to obtain adequate bronchial toilet. Pneumoperitoneum may also be of value to elevate the diaphragm, diminish the size of the thoracic cavity and help the lung fill the thorax. When the lung is expanded against the chest wall it will adhere at the point of air leaks and seal them.

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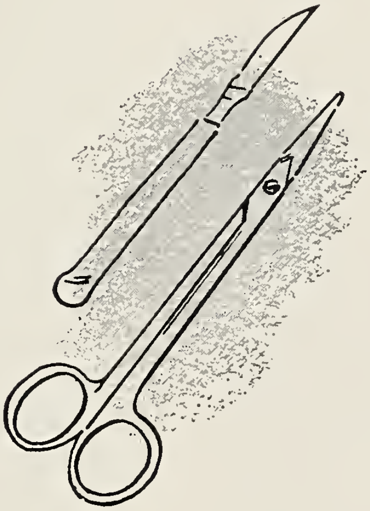

The Myeloproliferative Disorders

Current Clinical and Laboratory Considerations

JORGE A. FRANCO, *M.D.*, San Jose

• The various hemopoietic and supportive cells of the marrow may proliferate beyond physiologic boundaries in response to a number of stimuli.

In certain instances, the stimuli are known, and upon their removal the myeloproliferation returns to normal boundaries. These, the reactive myeloproliferations, are best represented by the leukemoid states and the secondary polycythemias.

In other cases, the stimuli responsible for the myeloproliferation remain unknown and the clinical disease ends fatally. These, the neoplastic myeloproliferations, include the granulocytic, monocytic and red cell leukemias, as well as the polycythemia vera and myelofibrosis syndrome.

In clinical practice it is important to identify the various myeloproliferative syndromes. This task has been facilitated by cytochemical tests that have recently become available, among which the estimation of the leukocyte alkaline phosphatase (LAP) in peripheral blood is a technically simple and extremely useful example.

The LAP is normal in secondary polycythemias and decidedly elevated in polycythemia vera, myelofibrosis and leukemoid states. It is greatly decreased in the granulocytic leukemias.

According to currently favored views,[4] in the bone marrow the primitive mesenchymal cell differentiates along the hemopoietic line as well as along the connective tissue series (fibrocytes, osteocytes, lipocytes).

Under physiologic conditions there is an orderly proliferation of the hemopoietic derivatives of the mesenchymal cell (granulocytes, erythrocytes, monocytes and megakaryocytes and platelets). This proliferation is matched by controlled removal of the mature end products of the respective cell lines, resulting in a fairly narrow range of normality. Similarly, the proliferation of connective tissue cells is kept within physiologic limits.

Clinical and experimental observations have demonstrated in some situations a selective proliferative response of a single blood cell line to a single stimulus, while in other instances a single stimulus seems to elicit a total hemopoietic response.

Examples of the first type of single cell response are the polycythemia of high altitude[9] (secondary to decreased oxygen saturation of arterial blood), and the neutrophilia that follows injections of bacterial polysaccharides.[2]

Examples of a total hemopoietic proliferative response to a single stimulus are met in the pancytosis induced in animals by the injection of the heat-stable fraction of polycythemic plasma and the administration of betyl alcohol.[7,8]

In all the above situations, the removal of the stimuli (return to sea level in the cases of polycythemia of high altitude, discontinuance of the administration of bacterial polysacchrarides and betyl alcohol) is constantly followed by a return of all the different blood cells to physiologic values.

A different situation occurs when the stimuli remain unknown, and the myeloproliferation ultimately ends fatally.

We therefore distinguish two basic types of myeloproliferation: reactive and neoplastic.

In the study of both the reactive and neoplastic types of myeloproliferation, correlation of the clinical manifestations with conditions observed on morphologic and cytochemical examination of specimens of blood and bone marrow, permits establishment of the proper diagnosis in most instances. Among the cytochemical tests, the most useful is the estimation of the alkaline phosphatase activity in the leukocytes of the peripheral blood.

The Leukocytic Alkaline Phosphatase (LAP)[3,5,6]

Alkaline phosphatases are enzymes which at an alkaline pH liberate orthophosphoric acid from a number of alcoholic or phenolic monoesters. The cytochemical demonstration of phosphatase activity depends on the formation of an insoluble precipitate at the site where the substrate hydrolysis has occurred. This precipitate must have a color different from the background and the cell cytoplasm. In the most widely used method,[6] the substrate is sodium-alpha-naphtol-acid phosphate in a propanedial buffer. The dye, Fast Blue RR, gives the precipitate a dark brownish color.

Under physiologic conditions a number of mature circulating granulocytes exhibit alkaline phospha-

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Submitted July 20, 1962.

tase activity. This activity can be expressed semiquantitatively by means of a "score." Each cell is rated from 0 (no activity) to 4+ (solid brown cytoplasm). The possible range is 0-400. Normal values in 100 consecutive determinations at O'Connor Hospital, San Jose, were in general agreement with data reported by other observers—that is, normal range 20 to 48.

Reactive myeloproliferations

The reactive myeloproliferations are best represented by the myelocytic leukemoid reactions and the secondary polycythemias.

The leukemoid state. In association with severe bleeding, infection or neoplasia the number of leukocytes may become greatly elevated (greater than 50,000 per cu. mm.). Most of the leukocytes are mature granulocytes, although with a variable number of immature forms; toxic granulations may occur; basophiles and eosinophiles disappear from the peripheral blood. The bone marrow shows granulocytic hyperplasia with moderate increase in immature granulocytes. There is striking elevation of the LAP in peripheral blood. This is a decisive finding which differentiates the leukemoid reaction from the granulocytic leukemias.

The secondary polycythemias. The cause may be clinically evident (pulmonary disease, cyanotic heart disease, androgen administration) or it may require extensive investigation (brain tumor, renal cell carcinoma, adrenal tumor, etc.). In peripheral blood there is striking elevation of hemoglobin, hematocrit and red cell values to polycythemic levels. The granulocytes and platelets, however, remain quantitatively and qualitatively normal. The bone marrow shows erythrocytic hyperplasia. The LAP in peripheral blood is not elevated. This decisive finding characterizes the secondary or reactive form of polycythemia.

THE NEOPLASTIC MYELOPROLIFERATIONS

The neoplastic myeloproliferations may involve a single cell line or may involve several cell lines either successively or simultaneously. Among the "pure" neoplastic myeloproliferations we include the granulocytic and monocytic (Schilling type) leukemias. Transitional forms do, however, occur. The mixed myeloproliferations include polycythemia vera, myelomonocytic leukemias, myelofibrosis syndrome and the erythemic myeloses. These various syndromes will be reviewed from a clinical and hematological point of view in decreasing order of frequency as observed at O'Connor Hospital.

Chronic granulocytic leukemia. Splenomegaly is the outstanding symptom-sign. The number of leukocytes is decidedly elevated. Basophiles and eosinophiles may be numerous. There are moderate numbers of immature granulocytes and rare blast forms in peripheral blood. Anemia is variable. The number of platelets is usually elevated. There is granulocytic hyperplasia of the marrow with increase in immature granulocytes. The LAP in peripheral blood is absent or considerably decreased. Even after apparent remission following therapy, the LAP remains abnormally low. It has been reported[5] that in the rare cases in which the phosphatase level returns to normal the remissions are unusually long, which would indicate a relative prognostic significance of the test.

Characteristic Leukocyte Alkaline Phosphatase Content of Peripheral Blood in Myeloproliferative Disorders

	Decreased	Normal	Increased
Chronic granulocytic leukemia....	+		
Acute granulocytic leukemia........	+		
Secondary polycythemia..............		+	
Polycythemia vera			+
Leukomoid reaction.......................			+
Myelofibrosis syndrome.................			+

Acute granulocytic leukemia. There is anemia, thrombocytopenia, presence of nucleated red cells in peripheral blood and either leukopenia or leukocytosis with the presence of blast forms. The bone marrow is infiltrated by myeloblasts. The LAP in peripheral blood is decidedly decreased. The clinical symptoms (pallor, infections, hemorrhages) are an expression of the hematologic abnormalities.

Polycythemia vera. In the initial, erythremic phase, the classical clinical features are ruddy cyanosis, splenomegaly, hepatomegaly and thrombotic phenomena. In this stage the peripheral blood shows pancytosis, with erythrocytes numbering more than 7,000,000 per cu. mm. of blood, and hemoglobin values of 18 to 24 gm. per 100 cc. Leukocytes number between 15,000 and 40,000 per cu. mm. with a few immature granulocytes and a pronounced increase in platelets. The bone marrow exhibits granulocytic and erythrocytic hyperplasia. There is striking elevation of the LAP in peripheral blood.

After a number of years, as the erythremic phase of the disease wears out, the leukoerythroblastic phase ensues. The splenomegaly becomes more prominent. There is a return of hemoglobin content and red cell count to normal values, but the leukocytosis and thrombocytosis persist and numbers of nucleated red cells and immature granulocytes become conspicuous in peripheral blood. The bone marrow is variously cellular. The LAP may revert to normal values.

After additional years the final phase ensues and the features of granulocytic leukemia (chronic or acute) or those of myelofibrosis will occur.

Myelofibrosis syndrome (agnogenic myeloid metaplasia of the spleen, etc.). Splenomegaly and hepatomegaly are the outstanding signs. Peripheral blood examination reveals anemia, reticulocytosis, tear-shaped and comma-shaped erythrocytes, nucleated red cells, giant platelets, thrombocytosis and moderate increase in leukocytes with moderate numbers of immature granulocytes. Often bone marrow aspiration is unsuccessful (dry taps). Surgically excised specimens of marrow in well-established cases reveals fibrosis and hypocellularity. Usually, but not constantly, there is pronounced elevation of the LAP in peripheral blood.

In early cases, repeated marrow aspirations from different sites may yield a cellular marrow. At the same time, the enlarged liver and spleen are the site of active extramedullary blood formation, as demonstrated by biopsy studies. The current interpretation of these findings is that the enlargement of liver and spleen with extramedullary hemopoiesis is not necessarily a compensatory mechanism due to relative bone marrow failure, but that in this syndrome the proliferative stimulus is potent enough to induce hyperplasia of hemopoietic and fibroblastic cells in the marrow as well as in organs which are potentially hemopoietic (liver and spleen).

In some cases the splenomegaly is associated with hypersplenism. In such cases, according to recent reports[1] splenectomy may be beneficial in decreasing the severity of the anemia.

In rare cases the outstanding hematologic abnormality in myelofibrosis is thrombocytosis. These cases are placed in a separate category by a number of investigators.[3]

The monocytic leukemias. Swollen, tender gums are the outstanding feature of the monocytic leukemias. In the more common, myelomonocytic leukemia (Naegli's type), the peripheral blood shows a mixture of immature granulocytes and monocytes. Similar conditions are found in the bone marrow. The LAP in peripheral blood is at low leukemic levels.

In pure monocytic leukemia (Schilling's type) the predominating cell in peripheral blood is a bizarre, abnormal monocyte. Rare normal mature granulocytes can be seen in peripheral blood. The marrow is predominatingly monoblastic-monocytic. The LAP in peripheral blood in the few remaining granulocytes is within normal limits.

Red cell leukemias (Di Guglielmo's syndrome). The severity of the hematological changes parallels the clinical course (acute, subacute or chronic). Anemia, leukopenia and thrombocytopenia are features. Bizarre and immature nucleated red cells are conspicuous in peripheral blood. The bone marrow is infiltrated by bizarre erythroblasts (megaloblasts) and myeloblasts. The unique feature that the red cell precursors are rich in glycogen helps to identify the disorder. The LAP in peripheral blood is decreased.

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CASE REPORTS

Papillary Carcinoma of the Renal Pelvis Following Cystectomy and Bricker Procedure for Carcinoma of the Bladder

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THAT UROTHELIAL TUMORS are multicentric is basic urological knowledge. Whether they are multicentric at the outset or become so by implantation is yet to be resolved; there is evidence to support both theories.[3,7] As the antegrade dissemination of urothelial tumors is well recognized, primary papillary tumors of the renal pelvis and ureter must be treated by total nephroureterectomy, including dissection of a cuff of bladder in order to minimize the incidence of papillary tumor at this site. However, the retrograde dissemination of tumor is a subject of somewhat more speculative interest. It is obvious that if one supports the implantation theory, vesicoureteral reflux will cause ureteral or pelvic tumors to be implanted from bladder tumors.

We are reporting herein two cases of papillary tumor of the renal pelvis which occurred after total cystectomy for transitional cell carcinoma of the bladder and ureteroileocutaneous urinary diversion. We believe that these cases are of special interest because the Bricker procedure provides for optimum drainage of urine with no reservoir to allow pressure and reflux. Furthermore, the tumors appeared to arise in the pelvis rather than by direct extension up the ureter from the area of anastomosis. These factors would seem to substantiate, at least in these cases, the theory of multicentricity rather than implantation by reflux. The latter might occur in cases of ileal or colonic reservoirs where intraluminal pressure and reflux favor the implantation of tumors in a retrograde manner.

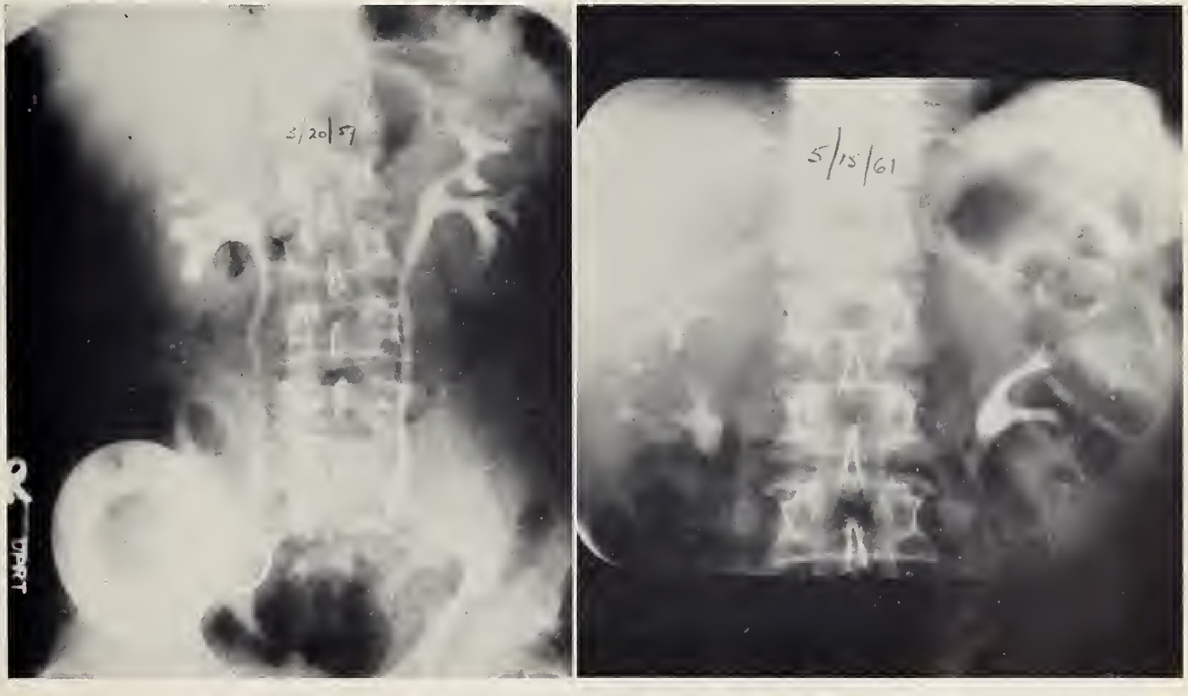

Figure 1.—(Case 1).—*Left,* normal intravenous pyelogram, March 20, 1959. *Right,* filling defect in pelvis of right kidney, suggesting renal papillary tumor, May 15, 1961.

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Presented before the Section on Urology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

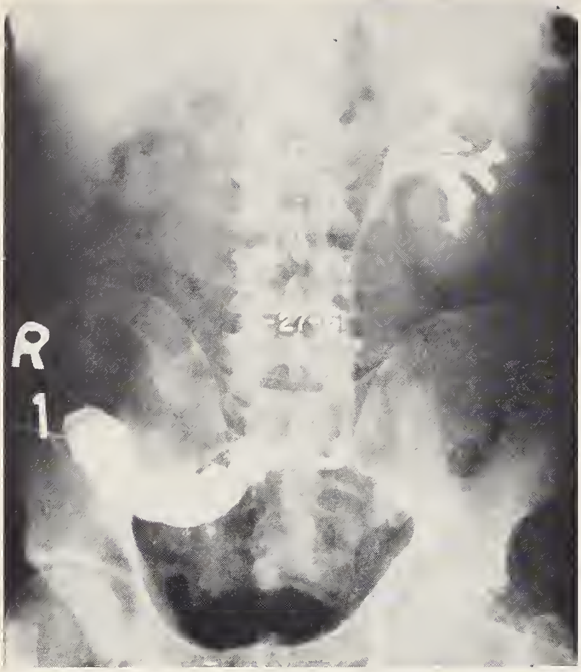

Figure 2.—(Case 1)—Ileostogram showing reflux up the left ureter revealing a normal left collecting system, but complete blockage on the right.

REPORTS OF CASES

Case 1. The patient, a 53-year-old man, had had transurethral resection of a transitional cell carcinoma of the bladder (grade II) six months before admission to hospital in March 1959. Cystoscopic and bimanual examinations immediately before admission revealed multiple exophytic tumors with no fixation of the bladder. Therefore, total cystectomy and bilateral ureteroileal anastomosis with cutaneous ileostomy was carried out on March 9, 1959. The preoperative intravenous urogram showed normal upper urinary tract architecture bilaterally with no evidence of ureteropelvic filling defects.

After the operation, electrolyte and creatinine determinations remained within normal limits. With the exception of one episode of pyelonephritis characterized by chills and fever and responding promptly to sulfonamide therapy, the patient remained well until in May of 1961 he noticed blood in the urine. There was no pain associated with the gross hematuria or with the passage of clots. Whereas intravenous urograms on March 20, 1959, were normal, a pyelogram on May 15, 1961, showed filling defects in the pelvis of the right kidney and suggested papillary pelvic tumor (Figure 1). Papanicolaou study of the urine showed class II atypical cells, not suggestive of malignant disease. On May 24 the patient had severe right flank pain and gross hematuria. At this time an intravenous urogram showed no appearance of dye in the right kidney, and an ileostogram showed prompt reflux on the left, outlining a normal ureter, pelvis and calyces, but showed no reflux up the right ureter (Figure 2). On May 26, because of complete right renal blockade associated with fever, the right kidney was examined through a flank incision and radical nephrectomy and ureterectomy were carried out. There were lymph nodes in the renal hilar area and along

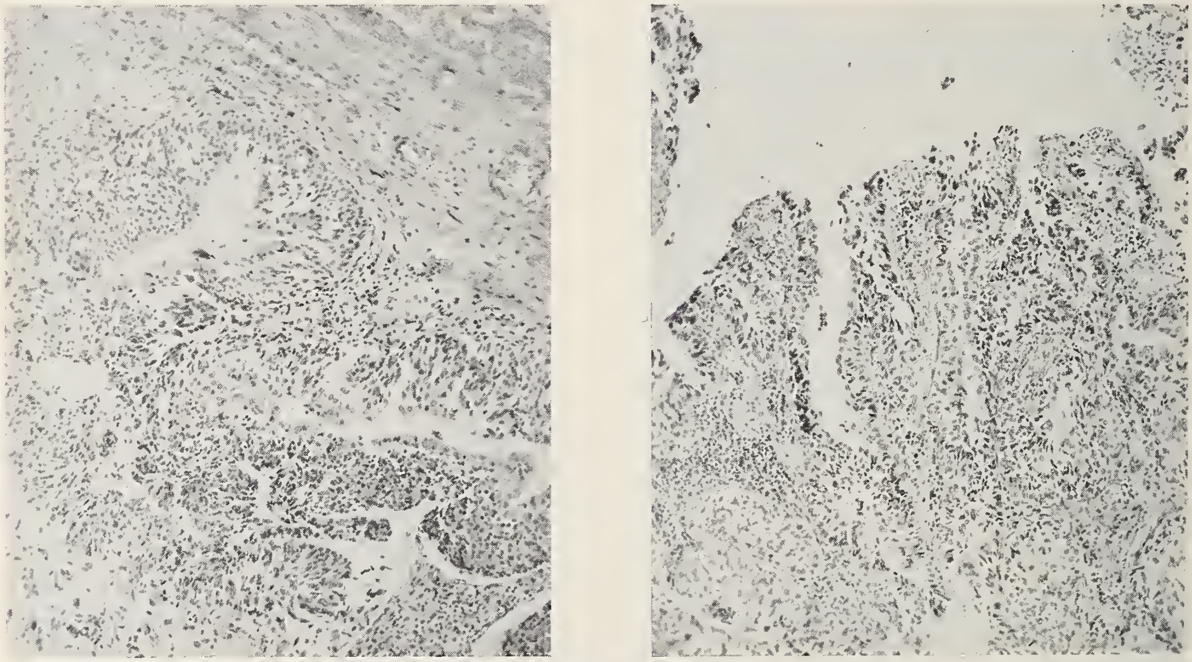

Figure 3.—(Case 1)—*Left*, photomicrograph (×250) showing papillary transitional cell carcinoma of the urinary bladder. *Right*, (×250) showing papillary transitional cell carcinoma of the renal pelvis. The slides are shown side by side to demonstrate the same type of tumor cell present in bladder and renal pelvis.

the vena cava which were grossly involved by tumor. The ureter was removed flush with the ileum.

The postoperative course was uneventful and the patient was discharged on the eighth postoperative day. The pathologist reported transitional cell carcinoma of the inferior calyx of the right kidney with extension to the ureter (Figure 3). Metastatic transitional cell carcinoma was found in one of four hilar lymph nodes. The kidney showed chronic and acute pyelonephritis and the ureter chronic and acute ureteritis with ureteritis cystica.

The patient thereafter was examined regularly in the outpatient department. The gross renal function and electrolytes always were within normal limits, as was an intravenous urogram shortly before the time of this report. Although the patient has survived one year since right nephrectomy, the prognosis is obviously poor.

CASE 2. A 70-year-old white man was admitted to the Veterans Administration Hospital in Los Angeles on April 25, 1957, because of obstructive urinary symptoms. He was found to have moderate prostatic enlargement and a fungating lesion on the floor of the bladder. Blood creatinine was within normal limits and no abnormalities were seen in roentgen examination of the chest and bones. An intravenous urogram disclosed a duplex collecting system on the right with ureteral duplication down to the bladder. On the left, there was a single collecting system (Figure 4). Neither side showed filling defects in the hollow portion.

The bladder tumor was removed by transurethral resection and the pathologist reported grade II transitional cell carcinoma with no evidence of muscle invasion. Two weeks later, transurethral resection of the prostate was done.

In July 1957, transurethral resection of a recurrent bladder tumor was done. The diagnosis was transitional cell carcinoma grade II of the urinary bladder. Another recurrence in November 1957 was treated by transurethral resection. In 1958, cystoscopy showed an extensive bladder tumor about the left ureteral orifice. On this occasion, biopsies showed transitional cell carcinoma, grade II to III. No mass was felt on bimanual examination. Because of the progressive frequency and size of the recurrences, cystectomy and ureteroileal anastomosis with ilealcutaneous conduit were done.

The surgeon failed to bring one of the ureters on the right (the duplication) into the anastomosis and the patient developed retroperitoneal urinary extravasation with pelvic and retroperitoneal abscesses. Another operation was carried out to join the second right ureter to the ileal conduit. After a stormy postoperative course, during which time the body weight dropped from 124 pounds to 69, the patient gradually began to regain strength, and was gaining weight when he was discharged. The pathologist reported papillary transitional cell carcinoma of the urinary bladder (Figure 5). Six lymph nodes were negative for tumor. Occasional postoperative intravenous urograms showed good appearance of the upper tracts until December of 1959, at which time there was a suggestion of a filling defect in the left renal pelvis.

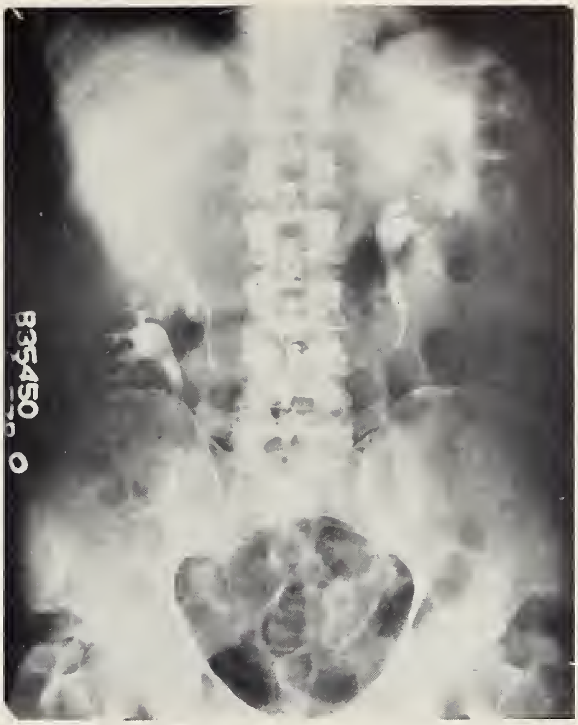

Figure 4.—(Case 2)—Normal intravenous pyelogram taken in December of 1957. Note right-side duplication radiologically complete.

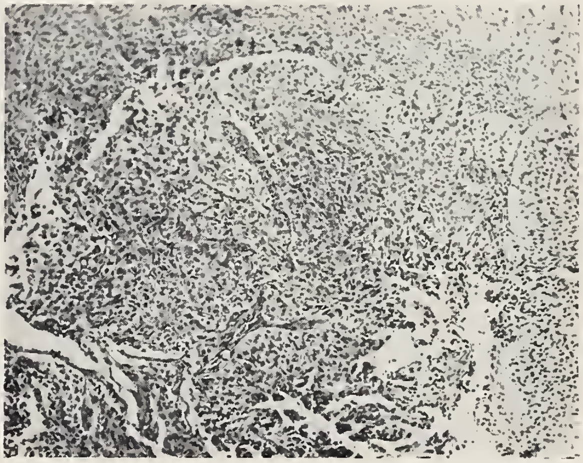

Figure 5.—(Case 2)—Photomicrograph (×250) of papillary transitional cell carcinoma from the urinary bladder.

On April 27, 1961, an intravenous urogram (Figure 6) showed an unquestionable filling defect in the left renal pelvis and upper ureter, and a clinical diagnosis of papillary tumor of the left renal pelvis was made. Left radical nephrectomy was performed to remove the left ureter at its juncture with the ileal conduit. There was gross tumor extension to

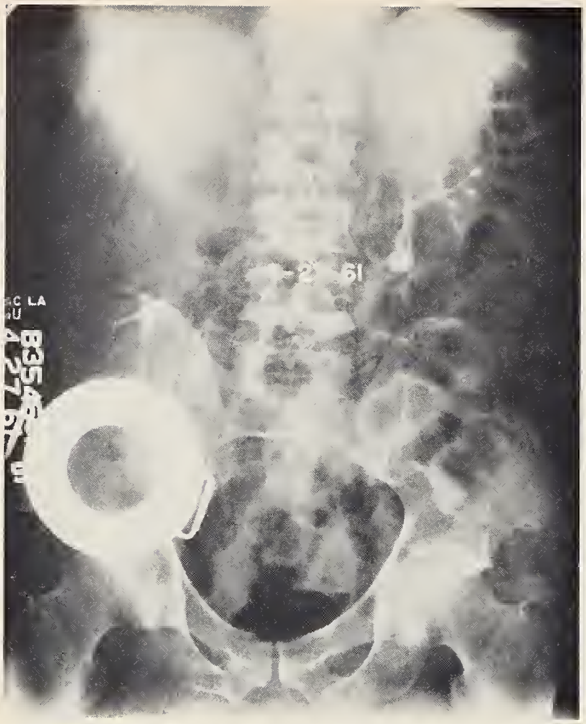

Figure 6.—(Case 2)—Intravenous pyelogram on April 27, 1961, showing an unquestionable filling defect in the left renal pelvis and left ureter. A diagnosis of papillary tumor of the left renal pelvis was made following this film.

the hilar and periaortic lymph nodes. After the operation the patient gained weight to the preoperative level of approximately 110 pounds. Tissue examination of the kidney showed infiltrating transitional cell carcinoma, grade IV, extending from the renal pelvis down the ureter (Figure 7). Two lymph nodes showed diffuse tumor metastasis (Figure 8). It was decided to give no irradiation therapy postoperatively. At last report, eight months following left nephrectomy, the patient's weight was being maintained at 105 to 110 pounds and he had no complaints. However, the outlook was considered dismal.

DISCUSSION

The prognosis of papillary tumors of the renal pelvis and ureter has been spectacularly improved by application of complete nephroureterectomy. This was emphasized by O'Connor.[8] Kaminsky also stressed that the tendency of pelvic ureteral tumors to spread by reimplantation dictates nephroureterectomy.[5] He also posed a question as to whether spread is direct or by lymphatic channel. Probably in our cases, lymphatic spread would be the most likely, for two reasons. First, the lymphatic pathway is from the bladder to the area of the renal pelvis. Second, in both cases the lymph nodes were involved with tumor.

Garcia and Bradfield[2] reported a case of bilateral

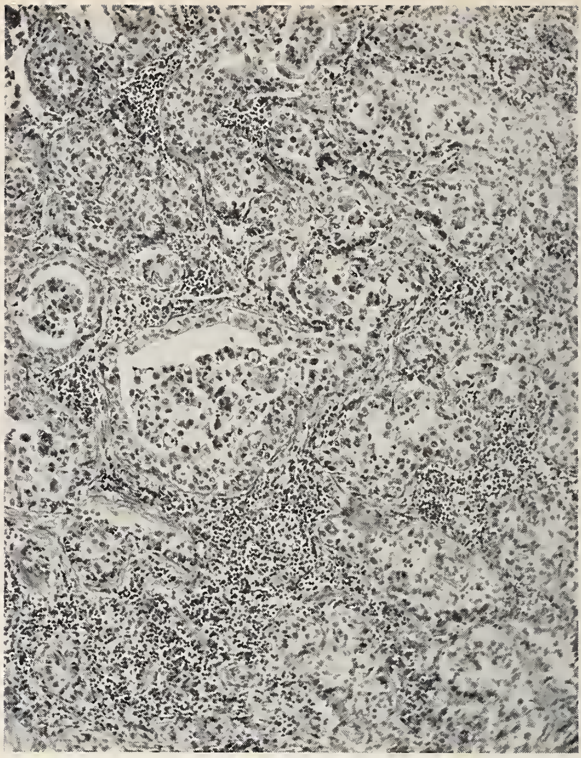

Figure 7.—(Case 2)—Photomicrograph (×250) of infiltrating transitional cell carcinoma of the renal pelvis. This tumor also extended down the ureter.

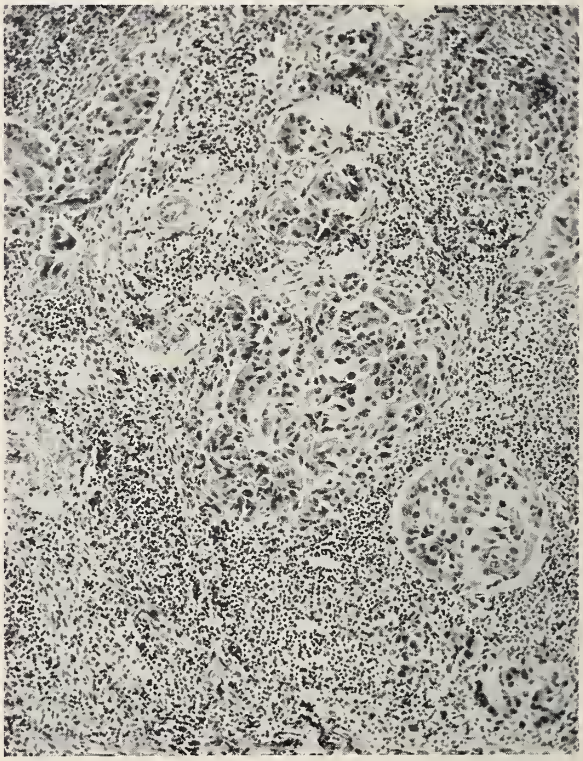

Figure 8.—(Case 2)—Photomicrograph (×250) of lymph node showing tumorous involvement. Same type of tumor in lymph node as in renal pelvis. Exactly same type of tumor present in Figures 5, 7, and 8.

simultaneous primary carcinoma of the ureter. They cited Felber,[1] who reported an asynchronous bilateral benign papilloma of the ureter with subsequent cancer of the ureteral stump, bladder and vagina. They also mentioned Ratliff,[9] who reported a case of primary bilateral carcinoma of the ureter. Evidence that carcinogenic agents in the urine produce urothelial papillary tumors is, of course, now rather substantial.[4]

Riches and Page[10] reported a case in which a carcinoma developed in the sigmoid colon following cystectomy and ureterosigmoidostomy for carcinoma of the bladder. They thought that this was the first case of this type to be reported.

Hueper and coworkers[4] were able to produce bladder tumors in dogs by feeding them B-naphthylamine, but could not produce these tumors in the colon when the urine had been diverted into an isolated sigmoid loop. They suggested that the secretion from the mucous glands prevented contact of the carcinogenic agent with the epithelium or in some way counteracted or destroyed its effectiveness.[4]

Lewis,[6] in a discussion of a paper by Kerr and Colby, cited the case of a patient with total cystectomy who had had no evidence of a lesion of either ureter before operation but died of a new growth of a grade II tumor in the ureter, 4 inches above the site of a ureterosigmoidostomy, three and a half years after operation. Lewis expressed belief that since we cannot eradicate the cause of the cancer or eliminate the source tissue, treatment must be adequate to remove the local lesion and, when indicated. the lymphatic drainage tracts. In his opinion lymph node dissection should be part of the procedure of total cystectomy.

SUMMARY

Two cases of carcinoma of the renal pelvis after cystectomy for carcinoma of the bladder, the first in the literature, are reported. The delayed appearance of these tumors suggested lymphatic spread rather than direct extension. De novo origin of these tumors cannot be excluded although this theory (multicentric origin) seems less likely to us than that of lymphatic spread.

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Acute Radiation Nephritis

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WITH THE MULTITUDE of beneficial uses made possible in the present era of high-energy x-ray techniques, the recognition of side effects and hazards assumes new importance. In this regard, the syndrome of radiation nephritis has not received widespread attention.

As far back as 1927, American investigators[5] demonstrated the production of renal insufficiency in dogs following deep irradiation, and described the interstitial fibrosis, tubular atrophy and glomerular hyalinization which characterize radiation nephritis. They stated, contrary to widespread opinion then prevalent, that the kidney was quite susceptible to the effects of x-ray.

Shortly afterward, Domagk[4] reported the first fatal case of radiation nephritis, in a nine-year-old girl who had received x-irradiation to the abdomen for mesenteric lymphadenitis. He described the presenting symptoms of anemia, albuminuria and a progressive downhill course terminating in renal failure six months following the therapy. Recently, Redd[10] added one more case of nephritis to the reported series, bringing the total to 64. The patient he described had carcinoma of the ovary and, following the administration of a 4,200 r mid-plane dose over a period of 47 days, developed hypertension, anemia, albuminuria, azotemia and cardiorenal failure.

Despite this documentation, cases continue to appear, and for this reason the case below is presented.

REPORT OF A CASE

A 63-year-old white man entered The New York Hospital for the first time in August, 1959, with

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Submitted April 13, 1962.

complaint of abdominal fullness and a 12-pound loss of weight. He was otherwise well. He was well-developed and healthy-appearing. The blood pressure was 130/70 mm. of mercury. A hard, irregular mass was felt in the left upper quadrant of the abdomen. The hematocrit was 40 per cent and the hemoglobin content was 12.5 gm. per 100 ml. The blood urea nitrogen was 13 mg. per 100 ml. Results of urinalysis were within normal limits. Roentgen study of the upper gastrointestinal tract showed a large filling defect of the proximal one-third and body of the stomach. At exploratory laparotomy a lymphosarcoma, 10 cm. in diameter, was found invading the major branches of the aorta in this area. The tumor was not resectable.

On September 1, 1959, a 39-day course of x-ray therapy was begun, directed through two anterior and two posterior truncal ports. The calculated tumor dose was 3,870 r; the calculated dose to each kidney was 3,960 r. After this treatment the patient was symptom-free for five and a half months. Then in April, 1960, he noted weakness, shortness of breath and the onset of moderately severe headaches.

On May 18 he was admitted for the second time with acute pulmonary edema. He was pale and in severe respiratory distress. The blood pressure was 230/120 mm., the pulse rate 126 and respirations 30 per minute. Moist rales were heard in the apices. The heart was enlarged and a protodiastolic gallop was heard at the apex. Pitting sacral and pre-tibial edema was noted.

The hematocrit was 23 per cent. Hemoglobin content was 7.5 grams per 100 ml. and erythrocytes numbered 2,500,000 per cu. mm. The platelets were adequate and the red blood cells were normochromic and normocytic. The blood urea nitrogen was 68 mg. per 100 ml. Specific gravity of the urine was 1.014 and the albumin reaction was 4 plus. There were five to fifteen red cells and many coarse granular casts per highpower field. In an x-ray film of the chest, diffuse enlargement of the heart, pulmonary vascular congestion and left pleural effusion were noted.

The patient was treated for pulmonary edema. Hydralazine, reserpine, morphine, meralluride and digitoxin were administered. Packed-cells were given cautiously. The response at first was good. Nevertheless, the blood urea nitrogen rose, and by the end of the first hospital week had reached 88 mg. per 100 ml. Because of persisting anemia, frequent blood replacement was necessary. Albuminuria and hypertension (blood pressure averaging 200/100 mm. of mercury) persisted and corticosteroids were used on a trial basis, although little information existed concerning their efficacy in this syndrome.[6] Prednisone (40 mg. per day) was begun and continued for two weeks. During this period there was no improvement. Hypertension persisted and was resistant to all therapy.

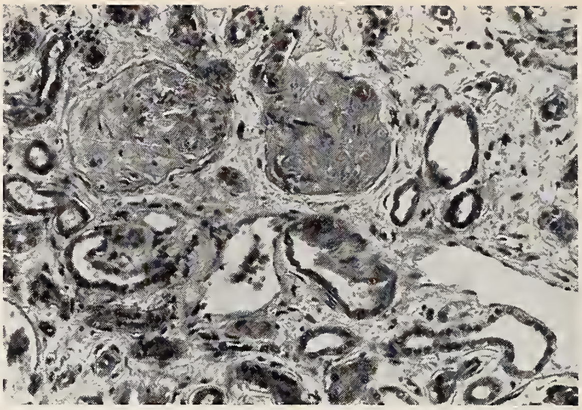

Figure 1.—Glomeruli show an advanced degree of sclerosis. There is increased interstitial fibrous tissue. (×169. Hemotoxylin and eosin stain.)

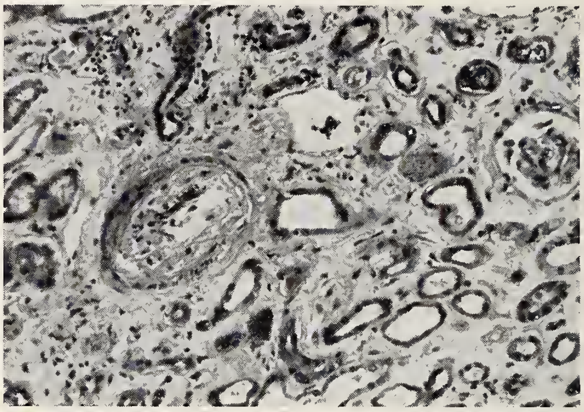

Figure 2.—An arteriole showing intimal, endothelial proliferation. There is increased interstitial fibrous tissue with scattered foci of chronic inflammatory cells. (×169. Hemotoxylin and eosin stain.)

Despite supportive and therapeutic management the patient became uremic, oliguric and hypotensive. He died eight weeks after admission and nine months after radiotherapy.

Necropsy

There was radiation pigmentation over the abdomen. The kidneys together weighed 310 gm. The capsules stripped with ease from the smooth surfaces. The cortico-medullary junctions were distinct. The parenchyma offered increased resistance to cutting. Microscopically, moderate numbers of glomeruli were partially or totally sclerotic (Figure 1), and most of the remaining glomeruli had thickening, reduplication and splintering of basement membranes. Some glomeruli, which were seemingly bloodless, had clubbing of capillary tufts. There was a moderate increase in the interstitial fibrous tissue, in which there were foci of chronic inflammatory cells, hemosiderin-laden macrophages and focal areas of hemorrhage. Walls of small arteries and arterioles were thickened by hypocellular fibrous tissue (Figure 2). No residual tumor was identified

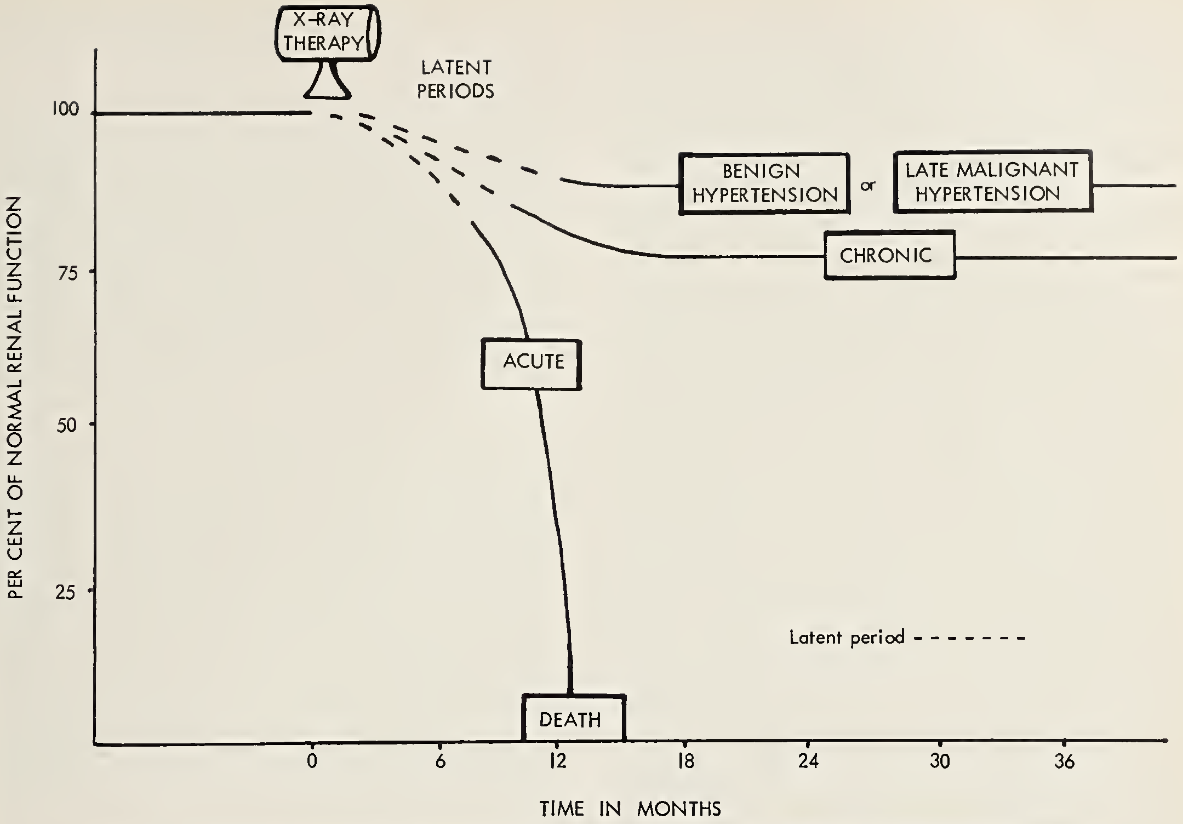

Chart 1.—Direction of the several clinical courses that may follow radiation-induced renal damage.

in or around the stomach either grossly or microscopically.

The final diagnosis: Irradiated lymphosarcoma of the stomach and radiation nephritis.

DISCUSSION

Radiation nephritis may be thought of as a syndrome in which renal damage is brought about by ionizing radiation and a clinical picture of cardiorenal and hematopoietic failure develops after a latent period of six months or more.

The clinical features of radiation nephritis vary according to the amount, extent, duration and distribution of irradiation. In 1952, Kunkler[7] studied 20 patients with renal damage following x-ray baths for seminoma and pointed out that in all cases in which renal failure developed, each whole kidney had received 2,300 r or more in five weeks or less. (The patient in the present case received an estimated 3,960 r to each kidney in 39 days.) Kunkler also stated that the amount of renal damage seen histologically correlated well with the anatomical distribution of the irradiation.

In the present case the latent period between the completion of x-ray therapy and the development of the first signs of renal damage was seven months, which correlates well with the observations of Domagk,[4] Kunkler,[7] Jernigan[6] and Schreiner.[11] During this period, renal damage proceeds on a cellular basis until a stage is reached when there are clinical manifestations of illness. Following the relatively asymptomatic latent period, one of several courses will follow (Chart 1). These have been outlined by Luxton[9]: (1) Acute radiation nephritis; (2) chronic radiation nephritis; (3) benign hypertension; (4) late malignant hypertension.

Acute radiation nephritis follows abdominal-renal x-irradiation by a latent period averaging six to 12 months. Early signs of development may be headache (hypertension), anorexia (azotemia) and weakness (anemia). The onset of clinically manifest disease is usually abrupt, with sudden congestive heart failure, pulmonary edema and anasarca.

These symptoms stem from a failure of three interrelated systems: renal, hematopoietic and cardiac. Deterioration of kidney function probably occurs first, with consequent loss of concentrating power, nitrogen retention and albuminuria.[1] Oliguria is a terminal event, and death usually occurs within three or four months of the appearance of symptoms.[11] The anemia of acute radiation nephritis is severe, rapid, refractory and normocytic-normochromic. The marrow is not aplastic.[7]

Cardiac failure is often the presenting symptom of acute radiation nephritis. Hypertension is striking and has been assumed to be secondary to renal damage.[8] Dean and Abels[3] in 1944 described a young normotensive woman who received 4,600 r to the left renal area for intra-abdominal lymphosarcoma. Following a latent period of seven years, her blood pressure was found to be 184/125 mm. of mercury. Left nephrectomy was performed and in the shrunken kidney pronounced glomerular sclerosis and intimal arteriolar thickening were noted. After operation, the patient became normotensive. Levitt and Oran[8] in 1956 reported on a 33-year-old man who had received 3,000 r to the left renal bed for a metastatic seminoma. Eleven years later, his blood pressure was 215/130 mm. of mercury. The left kidney was removed and showed almost complete obliteration of glomeruli and pronounced interstitial fibrosis. The blood pressure returned to normal.

Chronic radiation nephritis[2] may be interpreted as a less severe process, clinically and pathologically. It usually follows a longer latent period—ten months or more—is insidious in onset and protracted in duration. Mild hypertension, albuminuria, anemia and azotemia are concomitant, but cardiac decompensation and abrupt renal failure are infrequent. Jernigan[6] outlined the course of chronic radiation nephritis in a young woman who received a 3,000 r tumor dose for a right ovarian cystadenoma. Nine months following treatment she began to have headache, weakness and edema, and the blood and urinary abnormalities of hematopoietic-renal failure appeared. Renal biopsy showed interstitial fibrosis and glomerular sclerosis. The patient was sustained by supportive therapy through a near-acute phase and the disease went on to a milder, protracted course which was termed chronic.

Benign hypertension may also develop. It is associated with mild (usually systolic) elevation of blood pressure. Renal function remains normal and there is only a trace of albuminuria. Luxton[9] said that a late malignant hypertension may develop as long as 24 months after irradiation. Due to the length of the latent period and the degree of malignancy of the tumor necessitating irradiation, examples of this type are only occasionally seen.

Four structures are severely affected by renal irradiation: interstitium, glomeruli, tubules and arterioles. Most consistently there is fibrosis of the interstitium; and, in time, contraction of the scar tissue leads to interference with glomerular and tubular blood supply. The glomeruli may be atrophied, have endothelial proliferation or show partial or complete fibrosis. Tubules may undergo necrosis and atrophy. Arteriolar walls are often thickened and many show intimal endothelial proliferation.

Care of the patient in any of the phases of nephritis can only be supportive and symptomatic, as there is no evidence to indicate that the lesions will regress. In the case herein reported, a brief trial of corticosteroids had no effect. The only other instance in which the use of corticosteroids has been cited is in the report by Jernigan[6] of a patient who survived and entered a chronic phase. More information is necessary as to the efficacy of steroid therapy.

It would seem superfluous to discuss the prevention of this apparently avoidable process. However, the existence of this case and others is justification for emphasizing the importance of pre-irradiation renal evaluation and of careful calculation of dosage and port location to involve the kidneys as little as possible. In most cases of patients needing radiation therapy that incidentally impinges on the kidneys, it seems ill-advised to administer more than 2,000 r to either kidney. Follow-up observation of patients who have had abdominal irradiation is important.

SUMMARY

A case of acute radiation nephritis in a 63-year-old man is reported. The clinical features included hypertension, albuminuria, anemia, azotemia, congestive heart failure and edema. This syndrome will probably develop following the delivery of 2,300 r or more to each kidney in five weeks or less. The average latent period between irradiation and onset of overt illness is about six to twelve months. Pathological changes include extensive interstitial fibrosis, glomerular hyalinization and tubular atrophy. A regimen directed at correction of renal, cardiac and hematologic derangement is necessary in management.

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Diabetes Mellitus—"Brittle" Features Due to Cardiospasm

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THE TERM "BRITTLE DIABETES" usually indicates unrecognized insulin hypoglycemia followed by a rebound hyperglycemic phase which, when treated with an increase in insulin dosage, results in a recurrence of the hypoglycemia-hyperglycemia cycle. Repeated similar episodes eventually cause liver deglycogenation and ketosis. Improvement occurs with reduction in insulin dosage or adequate carbohydrate intake.

The "brittle status" is more likely to develop in strictly regulated patients whose diabetic state fluctuates from day to day. Other causes of unstable diabetes are focal infection, endocrine imbalance, negligence by the patient, obesity, malnutrition, faulty absorption of insulin, undiagnosed high renal threshold and variations in physical activity. It occurs also in patients with liver disease such as cirrhosis or hemochromatosis severe enough to interfere with adequate glycogen storage and release.

Brittle diabetes due to malabsorption and poor glycogen storage secondary to cardiospasm and malnutrition is described in the following case history.

REPORT OF A CASE

A 61-year-old Caucasian woman had had diabetes mellitus for 16 years. The patient had always been well and had maintained her weight at about 115 pounds. She had never been on a quantitative diet, but took about 1500 calories daily (carbohydrate about 170 gm., protein 80 gm. and fat 60 gm.).

From 1949 to 1954 she injected 45 to 50 units of protamine zinc insulin subcutaneously every morning and almost continually had four-plus postprandial glycosuria. Attempts to make the urine sugar free resulted in frequent hypoglycemic attacks. During 1954-55 she took 50 units of NPH insulin every morning and still had three to four plus glycosuria interspersed with attacks of hypoglycemia. Minor insulin reactions were controlled with sugar in orange juice; major reactions required intravenous glucose.

Over the next three years, globin and lente insulins, carbutamide and split insulin administration were tried. However, she continued in the brittle state with wide swings from severe acidosis to convulsive hypoglycemia. She had no gastrointestinal symptoms at this time and the results of physical examination were within normal limits.

In July 1959, as part of an examination to exclude a pancreatic tumor, gastrointestinal x-ray studies showed dilatation of the esophagus to three times normal size, with retention of barium. After an intramuscular injection of atropine, infrequent spurts of barium passed into the stomach. Otherwise, this study and an x-ray series of the gallbladder were normal. No abnormalities were noted in a blood cell count, serum cholesterol content, a serologic test for syphilis, a bromsulphalein test and an electrocardiogram.

Six months later the patient began to lose appetite and to have difficulty in swallowing solid foods and later liquids. Her weight decreased to 101 pounds. Esophagoscopy and forceful dilation of the area constricted by cardioesophageal spasm were performed. The improvement was minimal and after four additional dilatations the patient refused further instrumentation. Her weight declined to 93 pounds. On July 18, 1960, transthoracic gastroesophageal longitudinal myotomy extending from the upper portion of the gastric fundus superiorly for 8 cm. along the esophagus was carried out. The hypertrophied circular muscles of the distal esophagus were incised on the left posterolateral aspect. The left vagus nerve was divided and a hiatal hernia was also repaired.

The postoperative course was without complication. The patient was soon back to her 1,500-calorie diet and was given protamine zinc insulin, 15 units subcutaneously, and tolbutamide (Orinase®) 0.5 gm., orally, every morning. Her weight rapidly increased to 115 pounds and no further nausea or vomiting occurred. An x-ray film of the esophagus 13 months after operation showed no cardioesophageal stricture. In the spring of 1961 the patient went on a tour of Europe for six weeks and had no problems in reference to diabetes. At last report, 27 months after operation, the patient was still well and had had no attacks of diabetic coma or insulin shock.

COMMENT

In the present case a starvation status developed secondary to cardiospasm which was initially asymptomatic and considered unimportant until loss of appetite and vomiting ensued. In retrospect it is noteworthy that in the early phases of this illness, the patient took insulin and then ate a half hour later. It can be conjectured that feedings were retained in the esophagus until relaxation of the cardioesophageal spasm permitted the food to pass into the stomach, this delayed "feeding" causing hyperglycemia and glycosuria, which was treated with an increase in insulin. It can be conjectured further that finally the dosage reached levels that caused severe hypoglycemia, especially when food was long delayed in the esophagus. Orange juice and sugar relieved the hypoglycemia if the spasm relaxed enough for it (but not the solid food) to reach the stomach; otherwise intravenous glucose was required. Then, when the patient became hypo-

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Submitted May 16, 1962.

glycemic, insulin dosage was reduced. Later when the cardiospasm relaxed, allowing a large amount of food not sufficiently counteracted by insulin to enter the stomach, ketosis and sometimes coma occurred. After the esophageal obstruction was relieved by surgical operation, food reached the small intestine normally and the "brittleness" of the patient's diabetes disappeared.

SUMMARY

A patient with "brittle" diabetes in whom the brittle feature was caused by initially asymptomatic cardiospasm that prevented passage of food into the stomach, is reported. Relief of the "brittle" aspect occurred after esophagomyotomy was carried out.

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Cat Scratch Disease: Differential Diagnosis Of Regional Adenopathic Changes

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A 21-YEAR-OLD BOY was first seen 25 February, 1961, with complaint of swelling of three days' duration in front of the right shoulder and in the right axilla.

A sister of the patient had died at age three of malignant neuroblastoma; an aunt had Hodgkin's disease. The patient had had only the usual childhood diseases. Results of tuberculin tests in school always had been negative. He had had adenotonsillectomy in 1957.

On 22 February, three days before he was first examined, the patient had fallen and struck his right scapular spine area on a piece of wood. Some two weeks earlier he had been scratched over the right scapular spine area by a stray cat had he had picked up. The scratch was inflamed at first but then healed rather rapidly.

Upon examination a large swollen area was noted at the border of the right axilla and extending upward anterior to the right shoulder area. There was no other swelling and no nodal enlargement was palpated. The first impression of the swelling was attributable to traumatic hematoma. However, it did not diminish over the next several days and the patient began to have fever with temperature up to 101° F. in the evenings. On examination of the ears, nose, throat and lungs no abnormality was noted. The liver and spleen were not enlarged.

X-ray studies of the right shoulder area and of the chest on February 28 were within normal limits. Hemoglobin was 13 gm. per 100 cc. of blood. Erythrocytes numbered 5,040,000 per cu. mm. and leukocytes 10,300—42 per cent segmental forms, 30 per cent lymphocytes, 10 per cent stabs, 1 per cent juvenile forms, 2 per cent eosinophils and 15 per cent monocytes. On March 3, 1961, the heterophil antigen was positive only in dilutions of 1:28. A smear of the red blood cells and the platelets appeared normal, as did the lymphocytes and monocytes. Leukocytes numbered 10,700 per cu. mm., with 58 per cent segmental forms, 1 per cent basophils, 26 per cent lymphocytes, 5 per cent monocytes and 10 per cent eosinophils. Reaction to an intermediate strength tuberculin test was negative.

There were a few small, palpable lymph nodes in the left axilla. A swollen area extending anteriorly and superiorly from the right axilla appeared to be made up of smooth nodules which were tender. There was softness in the center of the area.

Because of the history of trauma and of the somewhat unusual location of the swelling extending anteriorly and superiorly, hematoma had to be considered, and in light of the familial history of malignant conditions, the possibility of disease of that kind had to be taken into account. No cat scratch disease antigen was available for a skin test.

As conservative treatment did not bring about improvement, surgical biopsy was carried out 9 March 1961. The mass was found to be made up of a conglomeration of lymph nodes varying in size from 1 x 1 cm. to 2 x 2 cm. Evidence of acute inflammatory process being noted, material from the mass was cultured. (Later it was reported as growing coagulase negative staphylococcus albus.) The main portion of the mass presenting into the incision wound was removed. A small drain was inserted and the wound was closed loosely over it.

Pathologist's report: The specimen consisted of several masses of lymph nodes enmeshed in fat. The nodes were succulent and up to 2 cm. in size. The cut surface of one of them showed a pattern suggesting small areas of focal necrosis with loss of small, greyish-white ribbons of tissue from the cut surface. On frozen section examination an inflammatory process suggestive of cat scratch disease was noted. Microscopic examination of multiple sections of the lymph nodes showed an acute inflammatory process. Centrally the granulomas were undergoing necrosis and surrounding this were epithelioid cells in which a scattering of multinucleated foreign body giant cells were seen. The centers of the small abscess were richly infiltrated with polymorphonuclear leukocytes. The inflammatory process extended into the surrounding connective tissue and fat. There was no evidence of malignant change.

The pathologic diagnosis was lymphadenitis, acute, with multiple abscess formation, right axillary lymph nodes. Inflammatory process consistent with cat scratch disease. The tissue specimens were reviewed by Stewart Lindsay, M.D., of the Pathology Department of the University of California Hospital, San Francisco, who concurred in the diagnosis of cat scratch disease.

Submitted April 30, 1962.

DISCUSSION

The diagnosis of the cat scratch disease is made by remembering to consider it among the various differential diagnoses usually considered in cases of regional adenopathy, by the presence of tender centrally necrotic lymph nodes, a history of contact with a cat, especially of being scratched by one, and by the use of the cat scratch antigen skin test. A large important area of differential diagnosis includes that of mesenteric adenitis and appendicitis, although the commonest areas of lymphadenopathy are the axillary and cervical areas.

SUMMARY

In the case of cat scratch disease here reported, diagnosis was complicated by a history of blunt trauma to the area of axillary swelling, a family history of malignant disease and lack of cat scratch disease antigen for skin testing.

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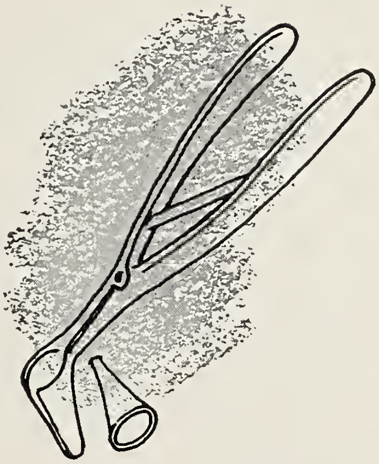

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EDITORIAL

The Keogh Bill

In the past ten years physicians throughout the country have paid tribute to one Keogh, a member of the House of Representatives. He is the man whose name has consistently been linked with a legislative bill to permit self-employed persons to take a tax deduction for funds they put aside into a retirement program.

This bill has now been approved by both houses of the Congress and signed into law by the President. It goes into effect January 1, 1963, which means that these self-employed persons will be able to take the tax deduction in April, 1964, on their calendar year 1963 income tax returns.

In the glad tidings flowing from the passage of this measure, it would appear that the name Keogh, while still remembered, means little more than Smith or Jones to the great number of physicians who will get both a measure of tax relief and a measure of retirement stability from this new law.

To set the record straight, Mr. Keogh is a resident of Brooklyn, N. Y. His full name is Eugene J. Keogh, he is a law graduate of New York University and Fordham University Law School, and he was serving as a member of the New York State Assembly when, in 1936, he was first elected to the Congress. He has been reelected regularly since that time. He is a Democrat.

Mr. Keogh first put his bill into the Congress ten years ago. It got nowhere at the outset but within a few years had attracted support from other Congressmen. About six years ago it was adopted by the House of Representatives but died in the Senate. This history was repeated in each session of Congress until 1962, when the Senate also passed the bill. There was speculation that the President might veto the measure, even in the watered-down form of its adoption, but facing the prospect that a veto would be overridden, he signed it.

In its present form the Keogh Law will permit self-employed persons to establish retirement programs and to deduct half of the program cost, up to a maximum of $1,250 in deductions, from their income tax returns each year. The deduction is from gross income, not from taxes payable.

The law also requires that a self-employed person setting up his own retirement plan and claiming the tax deduction must also set up a retirement plan for his employees who have been in his employ for three years or more.

On retirement, the self-employed person will be subject to income taxes on his cash receipts from his program. Thus tax deductibility for cost figures now will result in tax charges when funds are drawn from the program. This is a tax break for the individual in that today's deductions will take gross income from the top tax bracket, while income after age 65 will call for taxes on a presumably decreased annual gross income.

These are the basics of the law. Like most federal legislation, the Keogh Law is a skeleton on which regulatory rules and regulations must be draped by Internal Revenue Service. The usual procedure is for IRS to draft rules and regulations and to submit them to public hearings. Facts developed in such hearings will then be incorporated in revised rules, which will again be put up for public scrutiny.

These procedures will take several months at least. Thus those directly benefited by the law will not know until some time in 1963 the procedures that will qualify or disqualify a specific retirement program. Since no income received before January 1, 1963, will be affected, the taxpayer will have until April 15, 1964, to claim his own tax deduction for his own plan.

Meanwhile, the woods are rapidly filling with tax consultants, investment advisors, insurance agents and a host of "experts" willing to sell their own plans or programs to the self-employed persons who are finally getting a tax break.

The Council of the California Medical Association has noted this influx of advisors-with-portfolio and has agreed on a simple statement at this time: take your time and don't rush into a program until all the facts are known.

An individual who starts a program now, in the absence of official ground rules, is running the risk that his plan may not meet the qualifications of the regulations yet to be issued. It would be most unfortunate for a physician to contribute to a plan developed hurriedly and find out, a year later, that the plan is not qualified and that his contribution to it is not tax deductible.

Because of the extreme interest which physicians have demonstrated in the Keogh program, medical society offices have been in the forefront for visits by the "experts" who have their own plans to sell. For this reason the Medical Executives Conference, comprising the top staff members of the C.M.A. and the component societies, has entered into a study of the new law with full knowledge of the implications inherent in this type of legislation.

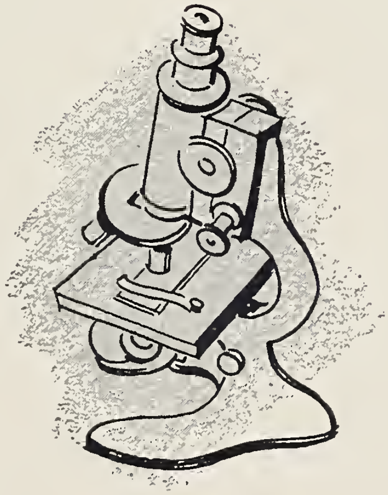
At the last Council meeting the conference made a report which could be summarized in two words: go slow.

The Medical Executives Conference has established a special committee of its members to delve into all aspects of retirement plans for the self-employed. This committee will follow the progress of rules and regulations as they are developed and finally adopted and will be in position to offer suggestions for the guidance of all physicians.

The C.M.A. Council has warmly applauded this move, has voted in favor of the concept of such a committee and has agreed to consider requests for such modest financing as the committee may need for tax, accounting and investment consultants.

The Council has recognized the present situation as one which will attract any number of salesmen, each with his own concept of an acceptable program and each with his silver tongue adjusted to the desire of each self-employed physician to provide for his own future and to gain a small measure of tax relief in the process.

The unanimous decision of the Council and of the staff executives of the state and component societies is: Go slow!



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 485th Meeting of the Council Los Angeles, Biltmore Hotel, November 3, 1962.

The meeting was called to order by Chairman Anderson in Conference Room No. 1 of the Biltmore Hotel, Los Angeles, on Saturday, November 3, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wilson, Todd, Quinn, Bullock, O'Connor, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson, Dozier, Cosentino and Grunigen. Absent for cause, Councilor O'Neill.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Clark, Marvin, Whelan, Klutch and Bowman, Doctors Batchelder and Miller and Mrs. Griffith of staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read and Salisbury of the Public Health League; county executives Lingerfelt of Fresno, Geisert of Kern, Field, Dalbec and Williams of Los Angeles; Brayer of Riverside, Burris of San Diego; Donmyer of San Bernardino, Blankfort of Marin and Brown of Sonoma; Doctor Malcolm Merrill, State Director of Public Health; Doctor Daniel Blain, State Director of Mental Hygiene; Doctor Lester McDonald of the State Department of Social Welfare; Doctors Robert Purvis of Stanislaus County, T. Eric Reynolds of California Physicians' Service; Robert Shell of Marin County, Harold Kay, John M. Rumsey and Warren L. Bostick; Mr. John Pompelli of the American Medical Association; and California Delegates to the A.M.A., Doctors J. B. Price, Ralph Teall, Donald A. Charnock, J. Lafe Ludwig, Eugene F. Hoffman, James E. Feldmayer, Charles B. Hudson, Henry Gibbons, III, Leopold H. Fraser and Arlo A. Morrison, and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 484th meeting of the Council, held September 29, 1962, were approved.

2. *Membership:*

(a) A report of membership as of October 31, 1962, was presented and ordered filed.

(b) On motion duly made and seconded, 26 delinquent members whose dues have been paid were voted reinstatement.

(c) On motion duly made and seconded in each instance, six applicants were voted Associate Membership. These were: Paul Hayes, Betty Kiger, Alameda-Contra Costa; James M. Casey, Fresno County; James W. Fullerton, David Boska, Los Angeles County; Robert H. Berger, Orange County.

(d) On motion duly made and seconded in each instance, five members were voted Retired Membership. These were: Ernest Aronstein, Fresno County; George I. Sellon, Orange County; Emmett L. Tisinger, San Bernardino County; Charles G. Jobbins, Hilmar O. Koefod, Santa Barbara County.

OMER W. WHEELER, M.D. . . . . President
SAMUEL R. SHERMAN, M.D. . . . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
IVAN C. HERON, M.D. . . . . Vice-Speaker
CARL E. ANDERSON, M.D. . . Chairman of the Council
BURT L. DAVIS, M.D. . . . Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . . . . Secretary
DWIGHT L. WILBUR, M.D. . . . . Editor
HOWARD HASSARD . . . . Executive Director
JOHN HUNTON . . . . Executive Secretary
General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400
ED CLANCY . . . . . . Director of Public Relations

Southern California Office:
1515 N. Vermont Avenue, Los Angeles 27 • 663-8071

(e) On motion duly made and seconded in each instance, reductions of dues were voted for five members because of illness or postgraduate study.

3. *Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reviewed several federal legislative acts which will affect the public health program in California. He also reported that influenza vaccine has had about double last year's use during 1962 and that supplies of the vaccine are almost at the vanishing point and new supplies not anticipated for some months.

Doctor Merrill also reported that Doctor Charles E. Smith, dean of the School of Public Health of University of California, has been awarded the Bronfman Award by the American Public Health Association. This award carries a handsome trophy and a cash award of $5,000. On motion duly made and seconded, it was voted to commend Doctor Smith on this achievement.

4. *Mental Hygiene:*

Doctor Daniel Blain, State Director of Mental Hygiene, supplied the Council with two pamphlets outlining the department's use of both public and private facilities and its in-training program for psychiatrists and its long-range program aimed at utilizing an increasing number of private facilities and physicians.

Doctor Blain also reported on the number of hospital beds now in use and the relative decrease in number of patients under treatment in state mental hospitals. He stated that his department will seek assistance from the Association in its legislative program and suggested that the Committee on Mental Health be strengthened and possibly enlarged.

Doctor Wheeler supplemented this report by reporting on the recent Mental Health congress staged by the American Medical Association, at which there were 1,700 registrants, including 75 from California. This report was ordered referred to the Committee on Mental Health, with instructions to study and report back at the next Council meeting.

5. *Social Welfare:*

Doctor Lester McDonald, medical director of the State Department of Social Welfare, gave a statistical report on welfare medical care programs. As of the end of September, 1962, he reported 6,300 patients hospitalized under the Medical Assistance to the Aged program and another 9,300 patients in nursing homes. In September, he reported, 1,660 applications for aid, of which 61 per cent were receiving some form of aid at time of application.

Doctor McDonald also reported a noticeable improvement in the attitude of social welfare workers toward the medical profession.

6. *California Physicians' Service:*

Doctor John G. Morrison, C.P.S. board chairman, reported that more than 13,500 inquiries had been received in the first two days following announcement of the new Senior Citizens programs and about 600 applications have now been processed. He stated that a report would be given the Council later on actions taken on 1962 House of Delegates resolutions.

7. *Medical Executives Conference:*

Mr. Hassard and Mr. Dalbec, reporting for the Medical Executives Conference, stated that in response to Resolution No. 20 of the 1962 House of Delegates, a canvass of medical society executives showed that the component societies are maintaining a close liaison with various county departments which deal with the provision of medical care.

Mr. Hassard also reported that the members of the conference had given much thought to programs which may be developed under the terms of the Keogh Bill, to permit tax deductions for the establishment of retirement programs for the self-employed. The conference has established a committee to follow this matter and the committee has expressed the need for great caution on the part of individual physicians before initiating programs of their own. Regulations to govern acceptable plans have not yet appeared and are not anticipated for several months. Meanwhile, tax and investment advisors are making offerings. Mr. Hassard asked that the Council (1) approve the concept of a fact-finding committee of the conference for the purpose of gathering and analyzing various programs which may be offered, and (2) approve moderate expenditures which may be needed to secure expert consultation from tax and investment counsel. On motion duly made and seconded, it was voted to approve the concept of this committee and to refer to the Finance Committee the matter of funds in moderate amounts for its work.

8. *Report of the President:*

Doctor Wheeler outlined the program of the conference of component society officers to be held January 12-13, 1963 in Los Angeles. Invitations will be extended to each component society president and four additional society representatives of his choosing. Transportation expenses will be met by the Association.

Doctor Wheeler also stated that a report on recommendations in the Bryan communications report would be prepared by the ad hoc committee to review these recommendations and copies will be sent to all members of the Council.

9. *Report of President-Elect:*

Doctor Sherman reported on several meetings he had attended, including an A.M.A. conference on society programs and a joint conference on quackery sponsored by the A.M.A. and C.M.A.

Doctor Sherman also reported that consideration was being given to proposed legislation which would provide rehabilitation services to victims of industrial accidents. He suggested that the Liaison Committee on Social Welfare and the Committee on Legislation should follow these proposals. On motion duly made and seconded, it was voted to authorize the above committees to participate in conferences on these proposals and to report back to a later Council meeting.

10. *Committee on Committees:*

Doctor Sherman proposed that a liaison committee to the State Board of Medical Examiners should be established, to work with the board on legislative and other matters of mutual interest. On motion duly made and seconded, the creation of such a committee was approved.

11. *Delegates to A.M.A.:*

Doctor Wilbur, chairman of the A.M.A. delegation, presented a statement of principles on health insurance prepared by an ad hoc committee under his chairmanship. The statement was approved in principle but no formal action taken.

Doctor Wilbur also presented three proposed resolutions which may be presented to the A.M.A. House of Delegates, covering the provision of medical services to the aged. On motion duly made and seconded, all three were approved in principle, subject to changes in language but not concept. A copy of the statement of principles and the three resolutions is appended to and made a part of these minutes.

12. *Finance Committee:*

Doctor Davis reported that the Finance Committee has held its initial meeting on the 1963-1964 budget and will meet again to place the budget in proper form for presentation to the Council.

Doctor Davis also reported that the Finance Committee had approved an appropriation of an addition $18,000 to finance the campaign for passage of Proposition 22 on the November 6 ballot. On motion duly made and seconded, this appropriation was voted unanimously.

13. *Bureau of Research and Planning:*

Doctor Gerald W. Shaw, chairman of the Bureau of Research and Planning, reported that a compilation of voluntary plans to provide prepayment medical care services to the over-65 group has been completed. On motion duly made and seconded, it was voted to approve distribution of this compilation to the component societies and to refer to the Bureau on Communications a study of possible additional distribution.

14. *Liaison Committee to Hospital Association:*

Doctor MacLaggan, chairman of the Liaison Committee to the California Hospital Association, reported on several symposia on hospital administration, staff principles and similar topics recently attended by himself and by Doctor Batchelder. Among those attending were a number of staff physicians and hospital trustees.

15. *Ad Hoc Committee on Polio Immunization:*

Doctor MacLaggan stated that a meeting of the ad hoc committee on polio immunization had given consideration to the Type III Sabin vaccine. Despite its withdrawal from usage at this time, Doctor MacLaggan stated that a large portion of the overall immunization program will be completed with the administration of the other two types of vaccine and that the committee was hopeful of a modification of opinion by the Surgeon General to permit the administration of Type III. At his request he was granted authority to develop a statement along these lines, along with the State Department of Public Health.

16. *Committee on Government Financed Medical Care:*

Doctors John Murray and John Rumsey reported that the present Medicare contract, covering dependents of service personnel, would expire next February. They asked (1) clarification of the committee's relationship with California Physicians' Service, which administers the program in California, (2) authority to negotiate with the Department of Defense, and (3) authority to speak in behalf of the medical profession in California. On motion duly made and seconded, it was voted to authorize the Committee on Government Financed Medical Care to discuss with the Department of Defense the renegotiation of the Medicare contract and to present evidence on the current level of medical fees in California.

17. *Commission on Medical Services:*

Doctor Murray gave a progress report on a study of the costs of carrying on a medical practice. He also reported that consideration had been given to resolutions 16, 37 and 41 of the 1962 House of Delegates and that the commission's report on them will be given the Council at a later date.

18. *Commission on Community Health Services:*

(a) Doctor Harold Kay, chairman of the Commission on Community Health Services, gave progress reports on the activities of several committees. For the Committee on School Health he presented a form developed for a physician's report on examination of school children. On motion duly made and seconded, this form was approved.

A statement by industrial nurses on the use of closed chest resuscitation was presented and, on motion duly made and seconded, voted approval.

The "Health Tips" column is now being used by nine school districts and 37 additional newspapers have been added to the mailing list.

(b) For the Committee on Traffic Safety he suggested that the committee serve in a consultative capacity with the Department of Motor Vehicles as regards physical requirements for driver licenses.

Doctor Kay also suggested that the Department of Motor Vehicles be asked to over-print in large letters the "M.D." insignia on licenses issued to physicians and this imprinting be accepted as clearance for physicians through police lines or other barriers in case of emergencies. On motion duly made and seconded, approval was voted for this procedure.

(c) Doctor Robert Purvis, chairman of the Committee on Blood Banks, presented a statement adopted by the committee, to insure proper and adequate personnel and facilities in all depots where California member blood banks would deliver blood supplies. On motion duly made and seconded, this statement was approved.

Doctor Purvis also reported that the California Blood Bank System was being reorganized along lines to permit it to work closely with the national and regional organization of the American Association of Blood Banks. He asked that the Association support this form of reorganization and co-sponsor it in California. On motion duly made and seconded, it was voted to establish a blood bank committee of not more than three members and that the reorganization of the system be co-sponsored by the Association.

(d) Councilor Wilson reported on a recent accident in Orange County, where a heavy gravel truck had collided with a moving railroad train, with two deaths and numerous injuries resulting. Physicians called to the scene were confronted with a traffic jam but walked a considerable distance to provide their services. This demonstration of emergency service, he reported, drew high praise from the community.

19. *Bureau on Communications:*

Doctor Warren L. Bostick, chairman of the Bureau on Communications, presented a set of criteria to be used by component societies which seek Association financial support of locally developed public relations programs. The criteria would call for the program to have statewide implication and application, for its approval by the bureau and its submission to the Council and its Finance Committee. On motion duly made and seconded, these criteria were approved.

Doctor Bostick also presented a request for the appropriation of an additional $27,500 for the production of an additional 11 television programs in the "Doctors At Work" program. He also suggested that a study of audience reaction to the program be carried out with funds already available. On motion duly made and seconded, it was voted to refer this request to the Finance Committee for study and recommendation at the next Council meeting.

20. *Legal Department:*

Mr. Hassard gave further report on the confusion created by passage of H.R. 10, the Keogh Bill, to provide tax deductions for limited funds put into retirement programs by the self-employed.

Mr. Hassard also reported on a recent State Supreme Court decision requiring a public district hospital to admit to its staff a physician who had been denied staff admission on grounds of incompatibility with staff and other hospital personnel.

21. *Judicial Commission:*

Councilor Davis reported on a request made by a component society for creation of a district judicial council under the terms of Chapter III of the Bylaws. He presented a list of members in the district for appointment to this council and asked approval of the list. On motion duly made and seconded it was voted to approve the appointment of such district judicial council, recognizing that both Doctor Davis and Doctor Albert Miller, Councilors from the district, were in agreement on the nominees.

22. *Commission on Cancer:*

Doctor Davis, chairman of the Commission on Cancer, reported that a study on the needs of cancer patients had been completed and referred to the Califonia Division of the American Cancer Society for study and implementation. He also asked that a condensation of this study be considered for publication in CALIFORNIA MEDICINE. On motion duly made and seconded, it was voted to refer this study to the journal for consideration for publication.

Doctor Davis also requested a vote of commendation for Doctor James C. Doyle for his having moderated the recent A.M.A.-C.M.A. Conference on Quackery, much of which had to do with cancer. By voice vote the Council concurred.

23. *Attendance at Council Meetings:*

Doctor MacLaggan suggested that the president of the California Hospital Association be invited to attend Council meetings. On motion duly made and seconded, it was voted to extend this invitation.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:00 p.m.

CARL E. ANDERSON, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

Principles of a Sound Program for Medical Care

An ad hoc committee was appointed by the Council to develop principles which the medical profession can adopt as a sound and supportive basis for the provision of medical services to those persons who are not able to meet the cost of such services from their usual resources.

This committee met on September 28 and agreed on the principles listed below as a starting point for development of a program which would (1) assure the delivery of needed medical services to the people, (2) assure the maintenance of sound scientific tenets, and (3) outline methods by which such services could be financed.

1. Financial responsibility for the care of the patient is initially his own. Should financial resources be unavailable to the patient or his family, responsibility then flows to the local community and from there to the county, to the state and, only as a last resort, to federal government. Government at all levels has a financial responsibility and a role to play in the provision of funds for the care of those who are in need of medical services and who lack the resources to purchase adequate health care protection.

2. The voluntary insurance programs through prepayment offer the most effective and versatile approach to financing health care. They already have, in the past several decades, demonstrated unprecedented growth and expansion and they possess the potential of further expansion if given the opportunity of refinement, enrichment and experimentation.

3. These principles have already demonstrated their versatility and effectiveness in the care of millions of Americans, including the medically needy. For example, the Kerr-Mills approach is in keeping with this method of financial responsibility in the medically needy group.

In some areas, however, especially where state enabling legislation is not yet sufficiently broad, it appears that local and state programs need to be extended to additional beneficiaries. Existing needs for broadening such coverage do not negate the philosophy of financial responsibility recognized in these programs.

4. Additional groups including the financially or medically needy may be assisted in financing the costs of medical care services through tax deductions, tax credits or other incentives. These could be allowed to the patient or to members of his family who assume the financial responsibility for his medical care even though they may not claim the patient as an exemption under federal or state income tax laws.

5. Another approach for the medically needy would be through cash allowances for premiums for voluntary prepaid health insurance through a sliding scale of cash allowances adequate to permit the purchase of sound health care protection.

RESOLUTION NO. 1

WHEREAS, the 87th Congress declined adoption of King-Anderson legislation; and

WHEREAS, programs for assisting the needy aged or the medically indigent aged need further study, refinement and extension; and

WHEREAS, the Kerr-Mills program is the law of the land and has been approved by the medical profession and has been successful in some areas but has not had an opportunity to demonstrate its effectiveness in other areas; and

WHEREAS, enabling legislation has been adopted in some states while not in others and in some of those areas where enabling legislation has been enacted it may require modification or broadening on the basis of experience to be more effective and efficient; and

WHEREAS, Kerr-Mills implementation has lagged or been inadequate in some areas because political figures have, for reasons of their own, seen fit to deter such implementation or physicians, also for reasons of their own, have not encouraged or stimulated state and local participation; and

WHEREAS, Kerr-Mills legislation is in accord with principles approved by the American Medical Association and is legislation already on the federal statute books which is capable of stimulating and supplementing local and state health care programs for the needy or near-needy; now, therefore, be it

Resolved: That the American Medical Association use its good offices and influence in urging all component associations to strengthen, expand or otherwise modify Kerr-Mills enabling legislation in those states where such legislation is needed and has been enacted, to the end that effective and valuable methods of health care may be provided to aged recipients, where the need exists, under terms approved by physicians; and be it further

Resolved: That improvements in existing Kerr-Mills enabling legislation should be sought; for example, in (a) lowering waiting periods for eligibility, (b) establishment of a dollar deductible for applicants rather than a time period, (c) removal of administrative regulations which debar some applicants from eligibility if they have been receiving aid from welfare funds, and other means, all of which should be explored by the various states; and be it further

Resolved: That the American Medical Association urge those component associations in areas where Kerr-Mills enabling legislation has not yet been enacted but where local and state programs need further stimulus or financial help from Federal "grants-in-aid" to use their utmost efforts in securing the adoption of adequate enabling legislation for this purpose.

RESOLUTION NO. 2

WHEREAS, the financing of medical and health services has in recent history become a political consideration; and

WHEREAS, voluntary prepayment and insurance plans have been developed in the past thirty years as a means of permitting people to budget for these costs and these plans have been spectacularly approved and accepted by the American people; and

WHEREAS, universal inflationary forces have required that the cost of providing health care services be increased, and such increases in the cost of prepayment and insurance coverage have had the double effect of (1) decreasing the coverage available where the cost paid does not keep pace with the cost of services to be provided, and (2) creating fuel for political claims that costs are at a level requiring governmental seizure of the entire field of furnishing and financing health care; and

WHEREAS, political figures recognize the cost factor in providing prepayment as a political factor but to date have given little or no recognition to the costs involved to individual taxpayers; now, therefore, be it

Resolved: That the American Medical Association through its Board of Trustees, its Councils, its staff and consultants use every possible effort to secure federal enactment of legislation which will permit tax deductions, tax credits or other monetary incentives to those who assume the cost, including those of adequate voluntary prepaid plans, of providing health care services for the needy or near-needy aged group of citizens.

RESOLUTION NO. 3

Resolved: That the American Medical Association endorse the principle in the care of the medically needy which will permit allowances for premiums for voluntary prepaid health insurance adequate to purchase sound health care. The amount of such allowances should be based on a sliding scale of income and in keeping with the principle that the government at all levels, national, state and local, has some financial responsibility in the care of the medically needy. Determination of need and administration should be at the local level.

PROPOSED AMENDMENTS TO CONSTITUTION

Amendments to the Constitution of the California Medical Association are required to lie on the table for one year before being voted upon. Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. Under the terms of the Constitution, these were subject to review by the Reference Committee in the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 in the 1963 House before being voted upon in that session. In five instances the 1962 Reference Committee made specific recommendations which were adopted by the House and are shown following the proposals.

In some instances the Reference Committee suggested that proposed amendments to the By-Laws, which need lie on the table only twenty-four hours, also be deferred until 1963 because of their association with constitutional amendments on the same subject. In the section on By-Law Amendments following this section, such deferral will be noted.

The following Amendments to the Constitution were offered in 1962, all of them placed on the table for definitive action in 1963.

* * *

1962 AMENDMENTS

Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. They were reviewed by Reference Committee No. 4

of the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 of the 1963 House. In certain instances the 1962 Reference Committee made certain specific recommendations which were adopted by the House.

CONSTITUTIONAL AMENDMENT No. 1

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Article I, Section 3 of the Constitution of the California Medical Association as now written be deleted and this section to read as follows:

"This Association is an organization composed of the component medical societies and their members, the House of Delegates, the Council, the Scientific Board, the Scientific Assembly, Bureaus, Commissions and Standing Committees."

* * *

CONSTITUTIONAL AMENDMENT No. 2

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Article III, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio with the right to vote, eighteen (18) members of the Scientific Board selected as provided in the Bylaws, and"

The present subsection (d) shall be redesignated (e).

* * *

CONSTITUTIONAL AMENDMENT No. 3

Author: Samuel R. Sherman.

Representing: The Council.

Resolved: That Article III, Part B, Section 9, of the Constitution of the California Medical Association shall be amended by inserting a new subparagraph (c) and redesignating the present subparagraph (c) as (d), and the present subparagraph (d) as (e). The new subparagraph (c) shall be inserted immediately after subparagraph (b) and shall read as follows:

"(c) One (1) member of the Executive Committee of the Scientific Board to be elected by the Executive Committee of that body from representatives of the scientific sections or members-at-large."

* * *

CONSTITUTIONAL AMENDMENT No. 4

(Printed with Action following Constitutional Amendment No. 5)

* * *

CONSTITUTIONAL AMENDMENT No. 5

Author: Dwight L. Wilbur.

Resolved: That Article III, Part A, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio, with the right to vote, the members of the Scientific Board, and"

The present subsection (d) should be redesignated as (e).

ACTION: The House adopted a motion directing the Council to appoint a committee to make a study and submit a report to the delegates and alternates at least thirty days before the next annual meeting concerning the membership requirements, voting procedures and organization of the scientific sections contemplated in Constitutional Amendments Nos. 1, 2, 3 and 5.

* * *

CONSTITUTIONAL AMENDMENT No. 4

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsive to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Constitution of the C.M.A., Article III, Part B, Section 11, be amended to read as follows:

"SECTION 11—Election of Councilors

"District Councilors shall be elected by the vote of the members, entitled to vote, from each District, in the manner and at the time specified in the Bylaws."

and be it further

Resolved: That the Bylaws of the C.M.A. be amended to provide for the election of District Councilors in accordance with this Constitutional amendment.

ACTION: Constitutional Amendment No. 4 (together with Bylaw Amendment No. 12 printed under 1962 Bylaw Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

CONSTITUTIONAL AMENDMENT No. 6

Author: Allyn J. McDowell.

Representing: Los Angeles.

Resolved: That the Constitution of the California Medical Association be amended by adding to Article I, Section 2, the following:

"This Association shall not have the right to enter into a contract with any person, firm, or agency of any kind with respect to the practice of medicine or fees for such practice."

BYLAW AMENDMENTS FOR ACTION IN 1963

Two proposed amendments to the By-Laws introduced in the 1962 House of Delegates were, on recommendation of the Reference Committee and vote of the House, deferred for consideration until 1963. These are shown here as introduced in 1962 and as identified, numerically, in the 1962 meeting.

The Reference Committee also suggested that a special committee be established, to review these deferred amendments. This committee, which has been established by the Speaker, will review all amendments to the Constitution and the By-Laws which relate to the structure of the Association.

Shown below are the amendments to the By-Laws introduced in 1962 and deferred for action in 1963.

BYLAW AMENDMENT No. 12

Author: Los Angeles delegation.

Whereas, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

Whereas, it is important that the members of the Council be responsible to the desires of the majority of the members of the C.M.A.; and

Whereas, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Bylaws of the C.M.A., Chapter VIII, Section 6 and Section 6.5 be amended to read as follows:

"Section 6—Election of District Councilors in Districts Having One or More Councilors

"The members of each component society shall elect the number of District Councilors to which the component society is entitled. At least sixty (60) days prior to the next scheduled session of the House of Delegates, the Secretary of each component society shall forward to the Secretary of the Association, on forms provided by the Association, the names and addresses of those District Councilors, so elected, and shall certify thereon, the term of service of each individual Councilor.

"District Councilors shall be elected, by the districts, at the same time and manner that Delegates and Alternates to the House of Delegates of the Association are elected by their respective component societies.

"Districts, in which Councilor vacancies are about to occur, shall, by secret ballot and majority vote, of the members of the district eligible to vote, and voting, elect a District Councilor to fill each vacancy, from such district, to serve for the ensuing term.

"Where new offices are created under the terms of Article III, Part B, Section 9(a) of the Constitution, each such new office shall be numbered serially with those already existing, and shall carry an initial term extending to the same date as has been previously established for offices in the same numerical sequence, heretofore established, and thereafter for a term of three (3) years."

and be it further

Resolved: That Section 6.5 of Chapter VIII of the Bylaws of the C.M.A. be repealed and stricken from the Bylaws.

ACTION: Bylaw Amendment No. 12 (together with Constitutional Amendment No. 4 printed under 1962 Constitutional Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

BYLAW AMENDMENT No. 13

Author: Allyn J. McDowell.

Representing: Los Angeles.

Whereas, the C.M.A. Bylaws have heretofore provided for a referendum vote of all the members only at the discretion of either the Council or the House of Delegates; and

Whereas, these two referring bodies constitute the very bodies concerning whose decisions any appeal of the members might be needed or sought; and

Whereas, it is inconsistent with democratic principles that members of this Association should thus in effect have no right of appeal concerning actions of the Council or House of Delegates; now, therefore, be it

Resolved: That Chapter XII, Section 1 be amended by adding the following:

"Any action taken by the Council or by the House of Delegates may be referred to all of the active members of the Association for their vote for or against repeal of such action if a petition requesting such a referendum is filed with the president of the Association within sixty days after the action is taken and if the petition is signed by a number of active members amounting to more than twice the number of voting delegates at the prior meeting of the House of Delegates. This number of petitioners shall constitute a referring body"; and be it further

Resolved: That Chapter XII, Section 2 be amended by adding the following:

"Whenever a referendum vote is initiated through a petition of appeal the petition shall name an active member as the initiator and that member shall have the privilege of selecting or composing a written argument of 1,000 words or less to be presented with the ballot on behalf of the petitioners."

ACTION: Referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next Annual Session.

1963
Annual Session

CALIFORNIA MEDICAL ASSOCIATION

March 23 to 27

AMBASSADOR HOTEL • LOS ANGELES

GENERAL THEME:

Endocrinology and Inborn Errors of Metabolism

5 OUTSTANDING GUEST SPEAKERS:

STEFAN S. FAJANS, M.D., Professor of Internal Medicine, Division of Endocrinology and Metabolism, University of Michigan Medical Center, Ann Arbor.

MELVIN M. GRUMBACH, M.D., Associate Professor of Pediatrics, College of Physicians and Surgeons of Columbia University, New York.

GEORGE J. HAMWI, M.D., Professor of Medicine (Endocrinology), Director, Division of Endocrinology and Metabolism, Director of Clinical Research, Ohio University College of Medicine, Columbus; and President of the Ohio State Medical Association.

JAMES D. HARDY, M.D., Professor and Chairman of the Department of Surgery; and Director of Surgical Research, Surgeon-in-Chief to the University Hospital, University of Mississippi Medical Center, Jackson.

CHARLES W. LLOYD, M.D., Senior Scientist; Director of the Training Program of Reproductive Physiology and Director of the Endocrine Research Clinic, Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts.

Symposium on the Adrenal Cortex

Symposium on the Pancreas

Panel on Diabetes

Problems of Gonadal Function

Spotlight on Medicine

Twenty-One Specialty Group Meetings

Basic Science Session

Fourteen Medical Motion Picture Symposia

Presidents' Dinner Dance—
Sunday, March 24—
Cocoanut Grove

House of Delegates—
Opening Session,
Saturday, 7:00 p.m., March 23;
Tuesday Afternoon, March 26,
and Wednesday, March 27

Cancer Conferences on
Pathology and Radiology—
Saturday, March 23

Registration Daily—
No Registration Fee

HOTEL RESERVATIONS—MAKE ALL HOTEL RESERVATIONS THROUGH C.M.A. HOUSING BUREAU— SEE PAGE 378

No. 14*

Pre-Placement Physical Examinations—Asset or Liability?

THERE HAVE BEEN indications in the literature recently of some doubt on the part of those responsible for occupational health programs as to the usefulness of routine pre-employment or pre-placement examinations.

We admit the validity of economic objections to such examinations, namely, cost in time, personnel, and equipment; but wish to point out that the benefits far outweigh the losses mentioned.

A California appellate court rendered an opinion recently involving aggravation of a pre-existing disability where no baseline had been established by the employer. The court advised: "It will be well to be diligent in ascertaining, at the very inception of the employment relation, all available or discoverable facts relevant to the prospective employee's physical condition."

Administrative codes prescribe medical supervision of agricultural workers exposed to injurious materials. An important aspect of this medical supervision is the pre-placement examination—before exposure to organic phosphates.

The need for pre-placement examinations in the interest of protecting the public is certainly established in the case of motor vehicle operators.

There are 25 million women in the work force in this country today. Pre-placement examinations are important in protecting a pregnant woman from any potential hazards of occupation.

The examinations can be a valuable tool for case finding (tuberculosis, diabetes, hypertension, heart disease, early malignant disease and other conditions). Disease unknown to the examinee may be discovered early. This is a major contribution, in a preventive sense, of pre-placement examination in industry.

The pre-placement examination can be of great importance in the field of health education. It has been proven effective in getting employees to listen to the benefits of health maintenance.

Laws in certain states, such as New Jersey and California, make it prudent to require a physical examination as a condition of employment. For instance, the unemployment compensation disability policy in the State of California states that an employee's insurance becomes effective on the date he enters employment.

Today we must cope with mental and emotional problems resulting from the isolation created by automation. The problem of determining the emotional status of an employee before placement becomes imperative when he is assigned to machinery representing a capital investment of millions.

The pre-placement examination, as part of an occupational health program, can be beneficial and valuable to all those concerned. The task of physicians, in and out of industry, as members of a world community, is to help keep this a human world. The substitution of a punch card health questionnaire for a good physical examination by a physician in industry, interested in the problems of people, as well as the economics of industry, would not further the objective.

COMMITTEE ON OCCUPATIONAL HEALTH
CALIFORNIA MEDICAL ASSOCIATION

Comments and Questions Are Welcomed by the Committee

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*This is the fourteenth of a series of articles prepared by the Committee on Occupational Health.

APPLICATION FOR HOTEL ACCOMMODATIONS

92nd Annual Session

CALIFORNIA MEDICAL ASSOCIATION

March 23* to 27, 1963
LOS ANGELES

***House of Delegates Opening Session Saturday evening, March 23; Scientific Programs begin Sunday morning, March 24.**

INFORMATION

1. Please fill in the form below **completely** for room accommodations at the CMA's 1963 Annual Session. There is only a limited number of single rooms available. Your choice of accommodations will be better if your request is for rooms to be occupied by two or more persons.
2. Your reservation request should include the **definite date and hour** of your arrival and departure.
3. Reservations can only be held until 6:00 p.m.
4. **All reservations must be made through the CMA Housing Bureau, Dept. 34, 693 Sutter Street, San Francisco 2, California.**
5. **DEADLINE** for Housing—March 1, 1963.

HOTEL ROOM RATES†

	Single	Twin	Suites
AMBASSADOR HOTEL 3400 Wilshire Boulevard			
Main Building	$14.00-$24.00	$18.00-$28.00	$40.00-$58.00
Garden Suites	$22.00-$34.00	$24.00-$36.00	$54.00-$66.00
CHAPMAN PARK HOTEL 3405 Wilshire Boulevard			
Main Building	$10.00-$11.00	$15.00-$18.00	$20.00-$28.00
Bungalows (suites)			$28.00-$48.00
THE GAYLORD HOTEL 3355 Wilshire Boulevard	$10.00-$12.00	$12.00-$15.00	$25.00-$35.00
HOTEL CHANCELLOR 3191 West Seventh Street	$10.00	$12.00-$14.00	none
SHERATON-WEST 2961 Wilshire Boulevard	$13.00-$20.00	$18.00-$25.00	$34.00

†The above quoted rates are subject to change.

CALIFORNIA MEDICAL ASSOCIATION—Housing Bureau, Dept. 34
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 92nd Annual Session of the California Medical Association, in Los Angeles, March 23-27, 1963. First meeting of the House of Delegates begins Saturday evening, March 23; Scientific Programs begin March 24.

Single Room $.................... Twin-Bedded Room $....................

Small Suite $.................... Large Suite $.................... Other Type of Room $....................

First Choice Hotel.................... Second Choice Hotel....................

ARRIVING AT HOTEL (Date):....................Hour:..........A.M..........P.M.

Leaving (date) ....Hour:..........A.M..........P.M.

Hotel reservations will be held until 6:00 p.m., unless otherwise notified.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names and addresses of both persons for each twin-bedded room requested; and names and addresses of all other persons for whom you are requesting reservations and who will occupy the rooms asked for:

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....

....

....

Individual Requesting Reservations—Please print or type: Are you a CMA Officer?..........A Delegate?..........An Alternate?..........

Name.................... County....................

Address.................... City and State....................

In Memoriam

Almada, Albert Alvin, Auburn. Died October 9, 1962, in Auburn, aged 53. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1934. Licensed in California in 1934. Doctor Almada was a member of the Placer-Nevada County Medical Society.

✣

Beers, Reid Lafael, Glendale. Died October 9, 1962, in Glendale, aged 54, of cerebral thrombosis. Graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1936. Licensed in California in 1938. Doctor Beers was a member of the Los Angeles County Medical Association.

✣

Boyd, Walter Harrington, Long Beach. Died October 22, 1962, in Long Beach, aged 68, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1925. Licensed in California in 1925. Doctor Boyd was a member of the Los Angeles County Medical Association.

✣

Byma, Garrett Ralph, San Bernardino. Died October 10, 1962, in Los Angeles, aged 41, after an operation on the heart. Graduate of Hahnemann Medical College and Hospital of Philadelphia, Pennsylvania, 1952. Licensed in California in 1953. Doctor Byma was a member of the San Bernardino County Medical Society.

✣

Faulkner, James Lawrence, Red Bluff. Died October 24, 1962, in Red Bluff, aged 66. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1926. Licensed in California in 1926. Doctor Faulkner was a member of the Tehama County Medical Society.

✣

Fowler, George W. J., Los Gatos. Died October 17, 1962, in Los Gatos, aged 95. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1892. Licensed in California in 1892. Doctor Fowler was a retired member of the Santa Clara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Gowan, Charles H., Glendale. Died October 15, 1962, in Glendale, aged 82, of acute myocardial infarction. Graduate of Rush Medical College, Chicago, Illinois, 1906. Licensed in California in 1909. Doctor Gowan was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Hansen, Arild Edsten, Oakland. Died October 16, 1962, in Oakland, aged 63, of myocardial infarction. Graduate of the University of Minnesota Medical School, Minneapolis, 1925. Licensed in California in 1960. Doctor Hansen was a member of the Alameda-Contra Costa Medical Association.

✣

Hansen, Oluf Steffen, Los Angeles. Died October 30, 1962, in Los Angeles, aged 53, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1937. Licensed in California in 1937. Doctor Hansen was a member of the Los Angeles County Medical Association.

✣

Hauser, Vernon F., Pasadena. Died October 20, 1962, in Arcadia, aged 57, of a massive coronary. Graduate of Loyola University School of Medicine, Chicago, Illinois, 1931. Licensed in California in 1931. Doctor Hauser was a member of the Los Angeles County Medical Association.

✣

Jensen, Frederick Grover, Long Beach. Died October 25, 1962, aged 42. Graduate of Hahnemann Medical College and Hospital in Philadelphia, Pennsylvania, 1946. Licensed in California in 1950. Doctor Jensen was a member of the Los Angeles County Medical Association.

✣

Jones, James Earl (J. Earl), Barstow. Died July 28, 1962, in Union City, Tennessee, aged 64, of coronary thrombosis. Graduate of Tulane University of Louisiana School of Medicine, New Orleans, 1922. Licensed in California in 1947. Doctor Jones was a member of the San Bernardino County Medical Society.

✣

Kinslow, Frank Aloysius, San Francisco. Died October 29, 1962, in San Francisco, aged 77. Graduate of Cooper Medical College, San Francisco, 1906. Licensed in California in 1906. Doctor Kinslow was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Larson, Ernest Eric (E. Eric), Laguna Beach. Died October 22, 1962, in Memphis, Tennessee, aged 72, of coronary thrombosis. Graduate of Rush Medical College, Chicago, Illinois, 1920. Licensed in California in 1924. Doctor Larson was a member of the Orange County Medical Association.

✣

Majors, Ergo Alexander, Bass Lake (Madera Co.). Died October 20, 1962, at Scottsdale, Arizona, aged 85, of myocardial infarction due to coronary sclerosis. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1902. Licensed in California in 1902. Doctor Majors was a member of the Alameda-Contra Costa Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

O'Grady, William Edward, San Francisco. Died October 27, 1962, in San Francisco, aged 58, of cancer. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1930. Licensed in California in 1930. Doctor O'Grady was a member of the San Francisco Medical Society.

✣

Quirin, Lloyd Frederick, San Francisco. Died October 14, 1962, in Marin County, aged 44, from injuries received in an automobile crash. Graduate of State University of Iowa College of Medicine, Iowa City, 1943. Licensed in California in 1953. Doctor Quirin was a member of the San Francisco Medical Society.

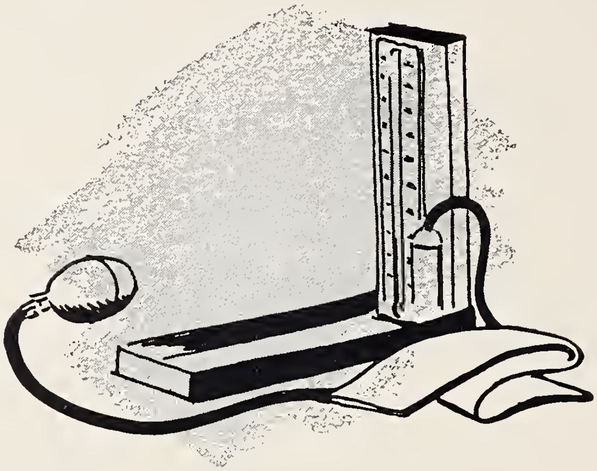
SMITH, WILLARD LEROY, Covina. Died September 29, 1962, in Covina, aged 50, of heart disease. Graduate of New York University College of Medicine, New York, 1942. Licensed in California in 1947. Doctor Smith was a member of the Los Angeles County Medical Association.

✣

SMYLIE, ROBERT S., San Diego. Died July 16, 1962, in San Diego, aged 69, of rheumatic heart disease with aortic stenosis. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1924. Licensed in California in 1930. Doctor Smylie was a retired member of the San Diego County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

WOOD, WALTER W., Upland. Died September 19, 1962, in Upland, aged 78. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1915. Licensed in California in 1915. Dr. Wood was a member of the San Bernardino County Medical Society.



INFORMATION

Health Insurance for Senior Citizens

A Report by the Bureau of Research and Planning, California Medical Association

AT THE PRESENT time older persons in California can obtain health care benefits under many different forms of voluntary health insurance. The various types of coverage offer a wide scope of benefits through a wide range of premium costs. The programs, which are available to older persons on an individual or group enrollment basis, provide guaranteed coverage during the life of the individual. They do not include the large variety of programs and policies offered by many insurance and prepayment organizations and other health insurance mechanisms which enable the individual to convert his policy and become eligible for benefits upon retirement.

The information in the survey of the California Medical Association is current as of October 1962: it does not necessarily list all those programs which are actually sold in California, since some companies did not respond to the study questionnaire. The rapid growth of these programs makes it impossible to anticipate the many changes that will be occurring in these programs. Physicians will find the descriptions of the existing programs helpful in informing patients who express an interest in securing coverage for health care services.

The study by the Bureau of Research and Planning reveals a variety of approaches and programs, which are classified as follows:

1. *Senior Citizen Hospital-Surgical Group and Group Approach Plans*

These plans, providing hospital and surgical expense benefits to those 65 and over, are offered by insurance companies under a mass enrollment technique. Enrollment can either be made during specified time periods on a statewide basis or all year round by personal application on reaching age 65.

Offering hospital room-and-board benefits up to $10 a day, these plans pay benefits from 31 to 140 days during hospital confinement. Additional benefits are paid to help meet other extra hospital expenses such as drugs, laboratory fees, surgical charges, and costs of care in nursing homes. Surgical allowances can range up to $225.

A recent report by the Health Insurance Institute indicates that, as of October 1962, 55 per cent of the total non-institutionalized aged population in the United States were enrolled in some form of voluntary health insurance. More than 200 organizations, nationally, provide coverage for the more than nine million senior citizens.

A recent survey by the California Medical Association's Bureau of Research and Planning reveals that 70 insurance and prepayment organizations offer 140 programs for such coverage on a guaranteed renewable basis in the State of California.

The Bureau's survey did not attempt to secure the number of aged enrolled, since its objective was to determine the nature and the number of the programs available.

The accompanying text describes the variety of plans available to the aged in California on a guaranteed renewable basis.

Applicants are eligible irrespective of their past medical histories and without medical examinations. Generally, plans require the newly insured person with a pre-existing health condition to wait six months before benefits are available for that particular condition.

Protection of these plans cannot be terminated for any individual policyholder—only for state residents as a group. Similarly, premium charges can only be adjusted for an entire state group—not on an individual policyholder basis.

Selected yearly premiums for a male, age 65, range from $78.00 to $108.00.

2. *Senior Citizen Lifetime Guaranteed Renewable Hospital-Surgical Expense Plans*

Persons past 60, who desire hospital and/or surgical expense protection on a guaranteed renewable individual or family basis can choose from a multitude of insurance companies' policies.

These policies generally offer hospital room-and-board benefits from $5 to $30 a day, with a wide selection of additional benefits for extra hospital expenses. Surgical allowances under these policies can range up to $600. Coverage for Miscellaneous Extras range from $100 to $1,000. Many of these policies include extra benefits such as ambulance service, out-patient surgery, and in-hospital medical care.

As with other guaranteed renewable lifetime policies, the insured person only can terminate the policy and the insurance company can only adjust premiums by policyholder class.

Benefits are paid for periods from 21 to 365 days. Entrance ages for applicants are 61 and over.

Selected yearly premiums for a male, age 65, range from $86.60 to $244.75

3. *Weekly or Daily Benefit Senior Citizen Hospital Expense Plans—Group Approach and Guaranteed Renewable for Life*

These policies pay a stated dollar allowance, ranging from \$25 to \$210 (\$300 if surgery is involved) for a maximum number of weeks while the insured person is under hospital care. For persons over 65, the range of benefit weeks is from 8 to 50. Benefits provided are designed to meet the added expenses of the policyholder's hospitalization.

Under a group approach plan, persons 65 and over can make application for this protection during specified enrollment periods. The plan is issued regardless of the applicant's health condition, and without medical examination.

Premiums can be modified only for the entire state group, and protection cannot be terminated for an individual policyholder—only for the group as a whole. This particular group-type plan is issued as a supplement to a basic "Senior Security" health insurance plan.

Under guaranteed renewable policies which provide benefits for lifetime, the insured person has the sole right of policy termination. The insurance company can adjust premiums only on a policyholder class basis.

Selected yearly premiums for a male, age 65, range from \$54.00 to \$168.50.

4. *Senior Citizen Catastrophic Expense Plans (Major Hospital or Medical)*

Under these policies, persons 65 and over can choose benefits toward the expenses of prolonged hospital and/or medical care. Each of these plans has a "deductible" feature which the insured person must satisfy before policy benefits commence. Some have a sharing of expenses (co-insurance) by the policyholder above the specified "deductible."

All the plans in the survey have a lifetime guarantee. Requirements for enrollment vary according to whether a group or individual insurance technique is used. Dependent upon the particular plan, there may or may not be a health requirement for application.

Benefits under these plans for hospital and/or medical catastrophic expenses can reach a maximum of \$10,000.

Selected yearly premiums for a male, age 65, range from \$55.00 to \$211.75.

5. *Additional Hospital-Surgical Expense Plans (Basic and Major) Providing Continuation of Protection Regardless of Changes in Health*

These plans, covering both those over and under 65 years of age, will guarantee the continuation of their protection without regard to a change in the health of the policyholder. As determined in the survey, they cover basic hospital, medical and surgical charges as well as major or catastrophic hospital and medical expenses.

The range of benefits for basic policies is from \$5 to \$30 toward daily hospital room-and-board charges. Additional benefits are paid to help meet other extra hospital expenses, and range from \$50 to \$1,000. Extra benefits such as nursing home care, and in-hospital medical are provided. Surgical benefits range up to \$750. Policies will provide benefits from 60 to 1,000 days for each illness or injury.

Catastrophic expense policies for hospital and/or medical expenses of this type have maximum benefits from \$5,000 to \$10,000. Deductible amounts vary from \$25 to \$1,000.

Under catastrophic hospital and major medical expense policies, the insured person commonly pays 20% to 25% of expenses above the "deductible."

Selected yearly premiums for a male, age 59, range from \$52.70 to \$83.00 for the basic plans, from \$40.00 to \$83.00 for catastrophic hospital plan, and from \$83.00 to \$91.00 for the major medical plan.

6. *Guaranteed Renewable Lifetime Hospital-Surgical Expense Plans—Issued to Persons Under 65 Years of Age*

These policies provide protection against hospital and surgical expense for the lifetime of the persons insured under them. The protection of these policies can only be terminated by the insured person through non-payment of the premium. The insurance company reserves the right to adjust the policy premium by policyholder class—not on an individual basis. Some of these plans are available with hospital benefits only and, as a result, have lower premium charges. Hospital room-and-board benefits range from \$5 to \$30 per day, for duration of stay ranging from 31 to 365 days.

Extra benefits included in each plan for same premium include ambulance service, out-patient surgery and emergency accident care; optional benefits can be added for an additional premium. Additional miscellaneous extras to help meet cost of hospitalization range from \$50 to \$1,250; surgical schedules range from \$150 to \$700.

Some guaranteed renewable lifetime hospital-surgical expense policies require the insured person to pay a small initial amount (called "deductible") of his hospital-surgical expenses before policy benefits start. Many of these policies, however, require no "deductible" amount or make it an optional choice of the insured person—in such cases, premiums are calculated according to the method selected.

Some guaranteed policies continue the same benefits throughout the lifetime of the insured person: others reduce benefits at 65 years of age or provide a fixed amount of benefits above 65 for lifetime. Many policies provide dividends which help reduce their yearly premium charges.

Premium charges of health insurance policies are determined by many factors: the applicant's age, sex, commonly the number of family members included, and the amount of benefits chosen.

Selected yearly premiums for a male, age 55, range from $84.80 to $233.60.

7. *Guaranteed Renewable Lifetime Hospital-Surgical Expense Plans Fully Paid-up at 65*

The unique feature of these guaranteed renewable lifetime hospital and surgical expense policies is that they become fully paid-up when the policyholder reaches 65 with their benefits continuing as formerly provided or on a reduced basis for the insured person's lifetime.

As with other guaranteed renewable policies, the insured person has the sole right of terminating the policy, with the insurance company reserving the right to adjust the policy's premium according to policyholder class.

These policies provide benefits, ranging from $5 to $25, toward hospital daily room-and-board charges with additional benefits for extra hospital expenses ranging from $75.00 to $480.00, and surgical operations with surgical schedules ranging from $100 to $600. Policy benefits are provided for as long as 365 days before age 65, with reduced benefits and benefit periods after the policyholder reaches his 65th birthday. Extra benefits include coverage for such services as emergency accident care, out-patient surgery, and ambulance service.

Many of these fully paid-up at 65 policies offer additional benefits for out-patient surgery, emergency accidents, and in-hospital physician visits. Some of these policies have optional "deductible" amounts which can be selected by the applicant. The maximum age range for applicants is between 55 and 61 years.

Selected yearly premiums for a male, age 35, range from $80.64 to $188.60.

8. *Guaranteed Renewable Major Medical Plans with Lifetime Coverage or Extended Benefits Beyond 65*

These guaranteed renewable policies provide benefits toward all normal medical expenses, both in-and-out of the hospital, resulting from catastrophic or prolonged illness or injury. They all have "deductible" features which specify the amount of expenses that the insured person must first meet before policy benefits begin.

These policies usually provide benefits of 75%-80% toward medical charges above the "deductible" amount and up to the maximum benefits provided—ranging from $5,000 to $24,000. Some of these policies have specified benefit amounts according to particular types of medical expenses.

Under these policies, too, the insured person has sole right of termination, with the insurance company reserving the right to adjust premiums by policyholder class.

Benefits under these policies may be continued after 65 as formerly provided by the policy, or on a reduced basis for the insured person's lifetime.

Selected yearly premiums for a male, age 45, range from $40.45 to $91.96.

9. *California Physicians' Service (Blue Shield)*

The three programs for persons 65 and over of the California Physicians' Service are briefly described as follows: Plans I and II are available on a year round basis. The third program, the "Senior Citizens Program" is available during specified enrollment periods. Plans I and II provide paid-in-full physicians' service for annual family incomes of up to $7,200. The income level for full payment of professional services of the Senior Citizen Program is $6,000. There is a registration fee of $5 for each program. Hospital benefits are for 31 days per year, with payments for room and board as 70% of a three-bed ward rate up to $18 per day.

Services of surgical assistants, anesthetists, and surgical consultants are paid in full. Diagnostic x-ray and laboratory charges are paid from $50 per year, in or out-of-hospital, to 70% of all charges. Under Plan II, 50 home and office physician visits are covered, after an out-patient deductible of $100 per year. Coverage for hospital extras ranges according to plan—from full cost of certain extras, to 70 per cent of charges. Waiting periods for pre-existing conditions range from 6 to 12 months.

Selected yearly premiums at age 65 range from $166.20 to $236.40.

10. *Blue Cross Plans Offered by:*

1—Hospital Service of California
2—Hospital Service of Southern California

Blue Cross Senior Citizen Health Plan

The Blue Cross Senior Citizen Health Plan for California residents of 65 years or older offers a choice of two programs—31 hospital days and 70 hospital days—for each calendar year. It is available from the two Blue Cross Plans.

Both programs include hospital, medical, emergency accident, and surgical benefits. In addition, the 70-day program offers, after six months' membership, care in a skilled nursing facility upon discharge from a hospital and the services of a registered visiting nurse in the home.

While the Plan pays a minimum of $18 a day, there is no maximum payment. Eighty per cent of most hospital expenses are covered, regardless of amount.

Eligibility for the Plan is not restricted by an upper age limit or a health statement. Pre-existing conditions are covered after six consecutive months of membership. Enrollment in the Blue Cross Senior Citizen Health Plan is open during specified periods during the year.

In addition to this plan, the Hospital Service of Southern California has another plan for older persons, which is open on a year round basis.

Selected yearly premiums at age 65 and over range from $105.40 to $189.60.

California Medical Association, 693 Sutter Street, San Francisco 2.

The following listing contains the names of the organizations which responded to the survey, and which offer one or more of the programs in the ten categories described above.

Insurance and Prepayment Organizations in California with Programs for Coverage for Older Persons

Aetna Life Insurance Company
All American Life and Casualty Company
American Association of Retired Persons Insurance Plan
American Casualty Company of Reading
American Motorist Insurance Company
American National Insurance Company
Bankers Life Company
Beneficial Standard Life Insurance Company
Benefit Trust Life Insurance Company (formerly Benefit Association of Railway Employees)
Business Men's Assurance Company of America
California Physicians' Service (Blue Shield)
California Western-States Life Insurance Company
Capitol Life Insurance Company
Colonial Life Insurance Company of America
Connecticut General Life Insurance Company
Continental Assurance Company
Continental Casualty Company
Federal Mutual Insurance Company
Fireman's Fund Insurance Company
General American Life Insurance Company
Girardian Insurance Company
Great Southern Life Insurance Company
Great-West Life Assurance Company
Guardian Life Insurance Company of America
Hanover Insurance Company
Hospital Service of California (Blue Cross)
Hospital Service of Southern California (Blue Cross)
Insurance Company of North America
John Hancock Mutual Life Insurance Company
Life Insurance Company of North America
Lincoln National Life Insurance Company
Loyal Protective Life Insurance Company
Lumbermens Mutual Casualty Company
Maccabees Mutual Life Insurance Company
Massachusetts Protective Association, Inc.
Metropolitan Life Insurance Company
Midland Mutual Life Insurance Company
Midland National Life Insurance Company
Ministers Life and Casualty Union
Monarch Life Insurance Company
Mutual Life Insurance Company of New York
Mutual of Omaha
National Travelers Life Company
New York Life Insurance Company
North American Life and Casualty Company
Northwestern Life Insurance Company
Northwestern National Life Insurance Company of Minneapolis
Occidental Life Insurance Company of California
Ohio State Life Insurance Company
Old Line Life Insurance Company of America
Pacific Mutual Life Insurance Company
Pacific National Life Assurance Company
Paul Revere Life Insurance Company
Pioneer Mutual Life Insurance Company
Provident Mutual Life Insurance Company of Philadelphia
Prudential Insurance Company of America
Republic National Life Insurance Company
Reserve Life Insurance Company
St. Paul Fire & Marine Insurance Company
Springfield Insurance Company
Standard Insurance Company
State Mutual Life Assurance Company of America
Travelers Insurance Company
Union Mutual Life Insurance Company
Washington National Insurance Company
West Coast Life Insurance Company
Western Life Insurance (See St. Paul Fire & Marine Insurance Company)
Westland Life Insurance Company
Woodmen Accident and Life Company
World Insurance Company

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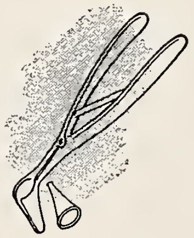

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. Harold Kay was installed as president of the Alameda-Contra Costa Medical Association at the annual meeting of the organization in November. Other new officers are Dr. Paul Cronenwett, vice president, and Dr. Carl Goetsch, secretary.

LOS ANGELES

Appointment of **Dr. J. Edward Beck,** of Detroit, as professor and chairman of the department of medicine at the **California College of Medicine,** has been announced by Dr. Benjamin B. Wells, dean.

Dr. Berk, who begins his new duties January 1, is at present clinical professor of medicine at Wayne State University College of Medicine. He also is visiting lecturer in medicine, Graduate School of Medicine, University of Pennsylvania.

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The two-year resident training program in child psychiatry at the **Reiss-Davis Clinic for Child Guidance,** Los Angeles, has been accredited by the American Medical Association. The accreditation is the first to an independent clinic in the Western section of the United States that is not affiliated with either a medical school or hospital.

MARIN

Dr. C. Ray Leininger, San Rafael, was installed as president of the Marin Medical Society, succeeding **Dr. Joseph J. Arons,** also of San Rafael, at the Society's annual meeting early last month. **Dr. Calvin Plumhof,** Kentfield, was elected president-elect.

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Dr. Ivan J. Miller, Sausalito, was installed as president of the Radiological Society of North America at the organization's recent forty-eighth annual meeting, held in Chicago.

Dr. Miller is currently president of the California Radiological Society.

SANTA CLARA

The Stanford University School of Medicine has added **two new associate professors** to the faculty of its department of psychiatry. They are Dr. William C. Dement and Dr. Herbert Leiderman. Dr. Dement, whose appointment began December 1, has done extensive research on the functioning of the mind during sleep and dreaming. He is now associated with the Department of Psychiatry, Mount Sinai Hospital, New York.

Dr. Leiderman, currently an associate in psychiatry at Harvard Medical School and a career investigator for the U. S. Public Health Service, has carried out clinical and laboratory investigations on sensory deprivation. His appointment becomes effective June 1, 1963.

GENERAL

Results of research by medical students along the entire Pacific Coast will be reported at the first West Coast Medical Student Research Day to be held February 16 at the University of Washington.

The Medical Student Research Society at Washington has invited all Coast medical schools to send representatives to present papers. It is planned to have some 60 presentations. Acceptances have already come from the University of California at Los Angeles, and the University of British Columbia.

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The Second Mexican Congress of Dermatology is to be held in Guadalajara, Jalisco, April 16-20, 1963. The preliminary program lists a wide range of subjects—Physiology and Biochemistry of the Skin, Immunology in Dermatology, Epidemiology of Cutaneous Diseases, Psychodermatoses, Tropical Dermatology, Pigmentation, Occupational Dermatoses, Cutaneous Oncology and Plastic Surgery.

Further information may be obtained from either of the two California delegates to the Congress—Dr. Paul Fasal, 706 D Street, San Rafael, and Dr. Maximilian E. Obermayer, 3875 Wilshire Boulevard, Los Angeles 5.

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District hospital trustees and administrators participating in the recent annual meeting of the Association of California Hospital Districts, held in Santa Barbara, unanimously endorsed a recommendation to their membership that the **Guiding Principles for Physician-Hospital Relations** be adopted and implemented.

It was resolved that "this association go on record as recommending to its members that each District (1) adopt the Guiding Principles for the Physician-Hospital Relation Program and (2) that each District join with its medical staff in requesting an examination by the California Medical Association under that program."

* * *

Local medical societies and heart association chapters are urged to develop plans for proper training of rescue personnel in **closed chest cardiac resuscitation** in a joint statement issued by the California Medical Association and the California Heart Association.

In a covering letter to presidents of component medical societies Dr. Harold Kay, chairman of the California Medical Association Committee on Allied Health Agencies, said that each society is urged to have its **membership informed as to the proper closed chest techniques.** Doctors then are encouraged to instruct firemen, policemen and members of emergency rescue squads in the procedure, he said.

The statement included the suggestion that local joint committees determine the **guidelines for training appropriate personnel** and for discouraging training of inappropriate personnel.

THE PHYSICIAN'S *Bookshelf*

THE RELUCTANT SURGEON—A Biography of John Hunter—John Kobler. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1960. 359 pages, $4.95.

John Hunter was born on February 13, 1728, at East Kilbride in Lanarkshire, Scotland, the son of a landed proprietor of modest means. Written off by his teachers as an idle, surly dullard, irredeemable by punishment or reward, John terminated his formal schooling at age 13. When he quit he could barely write coherent English, and had acquired a permanent distaste for scholastic halls.

For a time he managed the farm plantings and animals, and was engaged for a brief period in the trade of cabinet making. In desperation his anxious mother finally sent him to London to help his ten-year-older brother William in his School of Anatomy and Surgery. A fascinating but disquieting account is given of enterprising body snatchers who supplied William with stolen bodies for dissection. Those were palmy days for sextons. The bereaved paid them generously to keep out the "resurrectionists" (body snatchers) and the resurrectionists paid them still better to let them in. Bands of ruffians were formed for the purpose of snatching bodies, fighting each other in their fiendish and ghoulish activity. When the demand for bodies became greater than the usual supply (hanged criminals), murders were perpetrated for the sole purpose of providing bodies. (Burke and Hare in Edinburgh; Bishop, Williams, and May in London.)

The public, of course, was incensed. William Hunter's school was repeatedly stoned. British law favored the resurrectionists. Nobody owned a dead body, and therefore taking one could not be a theft. Stealing five shillings was punishable by death, a body snatcher was fined or suffered a public whipping! William needed up to 100 bodies a year for his school. John was delegated by his brother to handle the negotiations with the body snatchers. It is said John himself snatched bodies. One of William's master works, "The Anatomy of a Gravid Uterus," was based on dissections of 400 bodies over 23 years' time. Not until Parliament in 1821 passed the Anatomy Act which provided that all unclaimed bodies be distributed among the medical schools was body snatching brought to an inglorious end.

Soon after his arrival in London, John became a pupil of William Cheselden, the lithotomist of great fame, and the author of "The Anatomy of the Human Body," which was not superseded for 100 years. From this prodigy John learned the fundamentals of surgery. An interesting account is given of Cheselden's technique of cutting for stone. Upon Cheselden's death in 1751, John continued his surgical studies under Percival Pott at St. Bartholomew's Hospital. From him John learned the restorative powers of nature, and the value of simplicity in surgery, in medication, and in bandaging.

In the summer of 1754 John was admitted as a surgeon's pupil to St. George's Hospital, the institution with which he was associated for the rest of his life. John, at the suggestion of William, conducted some fundamental studies of the reproductive system in man by injecting the vas deferens with mercury, thus demonstrating the seminiferous tubules. The descent of the testes into the scrotum was also described accurately by John. Studies on the lymphatic system by the two brothers achieved a discovery ranking not far below Harvey's circulation of the blood.

John's first patient (1752) was suffering from a gonorrheal stricture, for whose treatment he designed special instruments resulting in its cure through direct caustic applications.

In 1754 William persuaded John to enter Oxford University, hoping he would acquire some cultural polish. Within a few weeks he was back at St. George's where he remained five months as house surgeon, returning then to William's School of Anatomy. This volume is to a great extent a biography also of William Hunter, whose extraordinary career and many triumphs are recorded almost as faithfully as John's. Interestingly described are William's fantastic successes as a man midwife, his appointment as accoucheur to the Queen and to many noble ladies, his prosperous School of Anatomy and Surgery, where his lectures were closely attended not only by medical students and doctors, but also by such celebrities as Adam Smith, Edmund Burke, Walpole, Samuel Johnson, Benjamin Franklin, Joshua Reynolds, and Thomas Gainsborough.

Disappointing and disturbing, therefore, after years of collaboration in important studies and in the conduct of the School of Anatomy, is the serious rift which occurred between the brothers when John returned from a stint of three years with the Army. During these years he made dissections of over 200 animals, correlating structure and function, demonstrated that fish can hear, ascertained how eels propagate themselves, and established rules governing the care of penetrating wounds, which he taught should be let alone until evidence of inflammation appeared.

On John's return from the Army, William failed to reinstate him as assistant in his school, leaving him with only his pension from the Army to sustain him. In need of other sources of income he became the surgeon-consultant of a prominent family of "tooth drawers," as dentists of the period were known. From this experience emerged the first scientific treatise on dentistry in the English language, his two-volume "Natural History of the Teeth," which included a comparative study of every species in the animal kingdom that grows teeth.

In the meantime he became engaged to Anne, the lovely and accomplished daughter of a Dr. Home, but he could not marry her, and for a reason he could not tell her. He had embarked (May 22, 1767) on a three-year study of what would happen to him if he infected himself with the pus excreted from the sore of a venereal patient, infected, so he thought, with gonorrhea. The unexpected happened—he contracted both syphilis and gonorrhea, the progression of which he followed closely, studying the effect of mercury upon the waxing and waning of an enlarged gland in his groin! When finally he had observed and had recorded every symptom, some due to gonorrhea, some due to syphilis, he applied the maximum dosage of mercury—and married Anne July 22, 1771.

The author provides an entertaining account of the Hunter household—Anne's salon attended by such prominent people as Walpole, Goldsmith, Lady Byron, and Haydn, while John was concerned with important or unusual patients and visitors to London who interested him more than any Peer, e.g., a family of five Eskimos, the first ever to set foot in England, were invited by him to dinner!

In 1767 the Royal Society admitted John as a Fellow, three months before the prominent and successful William! This was followed by his becoming a member of the Corporation of Surgeons and the appointment to the staff of St. George's Hospital, where students favored his ward walks and where he taught that to operate is to concede inadequacy. Said he: "No surgeon should approach the victim of his operation without a sacred dread and reluctance." "*Never perform an operation on another person which under similar circumstances you would not have performed upon yourself.*"

He taught the interdependence of mind, emotions, and body, and was aware of the psychic factors in disease and the power of autosuggestion. "Anxiety is expressive of the union of two passions, desire and fear."

John soon found himself teaching students from many lands. Moreover, George III appointed him Surgeon Extraordinary and sent some of his eight sons for instruction in Anatomy and Medicine, much to John's displeasure. Edward Jenner, a clergyman's son, became his devoted and admiring disciple. Together they pondered on the natural immunity to disease, why those who survived smallpox were seldom reinfected. John recognized in Jenner a capacity for creative research and a curiosity as omnivorous as his own. "*Don't think,*" he would say when Jenner stopped to weigh the feasibility of some thorny experiment—"Try it." In 1798 Jenner published his "Inquiry into the Cause and Effect of the Variolae Vaccinae."

Some of the illustrious Americans who had been at one time students of either William or John or both were: Richard Bayley who became the first Professor of Anatomy and Surgery at Columbia College; Philip Wright Post, his son-in-law, who became Professor of Surgery and introduced John's operation for popliteal aneurysm in America; Benjamin Waterhouse who became the first Professor of the Theory and Practice of Physic at Harvard; although Harvard later sacked him, he introduced a batch of trustworthy smallpox vaccine from Jenner's stock into America; John Morgan who founded with William Shippen the first medical school in America at the University of Pennsylvania, became its first Professor of Physical Theory and Practice, and was the first to advise specialization in Medicine; Philip Syng Physick, physician to Andrew Jackson, who was later hailed as the Father of American Surgery.

One morning in 1772, John, aged 44, was struck by a spasm of chest pain of such violence that he could neither stand nor lie down. Laudanum brought no relief. His ashen face and white lips were those of a corpse and he had a sense of imminent death. He felt his pulse but detected no beat. Forty-five minutes passed before relief set in. Three years later the second attack occurred which left him greatly enfeebled. In this state he was seen by Jenner who diagnosed his trouble as "angina pectoris"—a term coined by Heberden—of which he had seen two cases, both of which had been studied after death, disclosing a "thickened coronary" in one, and in the second "a firm fleshy tube within the coronary artery with ossification dispersed through it." For the rest of John's life, the least exertion, physical or emotional, was apt to induce spasms ending in unconsciousness. "My life is at the mercy of any rogue who chooses to provoke me." But the disease did not injure the major area of his cerebral cortex—the seat of intellectual function—for he retained to the end his powers of observation and reasoning. *The periods of his greatest debility were among his most creative!*

Indeed his activities continued unabated. In 1783, he acquired a two-house mansion in Leicester Square, a few houses removed from the home of Sir Joshua Reynolds, who gave the gayest parties in London. He soon added a third building, containing a lecture theater on the lower floor, and a long lofty galleried hall on the upper floor where John installed his anatomical collection. This was to become known ever after as the Hunterian Museum and later was acquired by the Royal College of Surgeons with a grant from the Crown. Here he integrated within a single thematic frame the manifold aspects of comparative anatomy, a mass of animal and vegetative preparations, thousands upon thousands, including 6 whales; 5,000 jars of wet specimens and a colossal number of specimens from crocodiles' teeth to the battery of an electric eel; the full hive economy of the honey bee; and a large collection of monstrosities, the most famous being a giant 8 feet, 6 inches tall (the acquisition of which provides a fascinating chapter)—all to elaborate the grand motif: What distinguishes life from non-life in both individual and species is an innate power of self-maintenance, and by it are produced the endless adaptive mutations of structure.

In addition, John maintained a second great establishment at Earl's Court—52 acres in the country where he was perpetually conducting experiments on dormice, hedgehogs, rabbits, bats, birds, mice, pigs, lions, tigers and leopards, trying to answer such questions as: why plants grow upward; does coloration play a part in the sexual excitement of the zebra (it does); how do bones grow; do ovaries wear out by repeated propagation (they do in pigs); where do swallows go in winter; can the formation of pearls be artificially stimulated (they can); how do pigeons give "milk" to their young; what is the pitch of the sound of swarming bees (treble A above middle C)!

Here John worked incessantly framing strategems to unriddle the riddles that seethed in his brain. Close to the spirit of pure science, he often pursued an idea without concerning himself about its practical potentialities. Nevertheless, there was hardly a major surgical development during the next two generations that had not germinated in the Hunterian seedbed.

Meanwhile the rift between William and John mounted. William resented John's overshadowing renown, the magnitude of his establishments, and the multiplicity of his works. Lamentably, the Royal Society was treated to a brotherly squabble as to which one had discovered the structure of the placenta. The Society looked away in disgust and embarrassment and refused to arbitrate the quarrel.

One of William's last redeeming acts was to educate his sister Dorothea's son, Matthew, who later became a noted and popular surgeon and teacher in his own School of Surgery and Anatomy. William finished his last of thirty-odd books and monographs in 1783, a scanty output compared with John's, but of high quality. He died on March 30, 1783, of a stroke (without reconciliation with John).

During the spring of 1785 John suffered his worst "heart" attack in years. But again he revived and pursued one of the most rigorous inquiries of his career: his discovery of collateral circulation following ligation of the carotid artery in a young stag with growing antlers, which caused the affected antler to grow cold and its growth to stop. However, the antler soon became warm again and resumed growing, due as Hunter demonstrated to a well-functioning collateral circulation.

Four months later John was confronted with a popliteal aneurysm of great size, for which he applied two ligatures in "Hunter's Canal," instead of just above the aneurysm as in Anel's operation, and two ligatures below the aneurysm. The patient recovered without gangrene due to the collateral circulation around the knee which John had postulated on the basis of his experiments on the deer. Subsequently John limited the operation to ligation in the "adductor canal"—his fourth patient lived fifty more years.

Another study was published as a "Treatise on Venereal Disease," the product of 18 years' investigation, but inaccurate since it was based on the supposition that he had inoculated himself with gonorrhea, whereas actually he had inoculated himself with both syphilis and gonorrhea.

John's practice at this time was extensive but not remunerative. In his waiting room the Duke of Richmond might find himself sitting between some grimy-handed coke heaver and his own haberdasher. John adjusted his fees to the patient's pocketbook. "You are the best judge of your own circumstances, and it is far from my wish to deprive you of the comforts of life." He accepted no pay from clergymen, authors, or artists. He treated workingmen first, saying: "You have no time to spare," adding with a scornful glance at the group of fidgeting noblemen: "Most of these can wait, as they have 'vurra' little to do when they go home."

His patients included the Boswell family, George Byron for his club feet, the Duke of Atholl's son, Thomas Gainsborough, Reynolds, and Benjamin Franklin. But not all was to his liking or to his benefit. He had made many enemies by his candor, his brusqueness and his presumptuous criticism of fellow surgeons.

On October 16, 1793, at a board meeting of St. George's Hospital, an insolent remark was made by a fellow board member, which so angered John that while struggling to control his temper he staggered into the adjoining room, fell senseless, and died that afternoon. Necropsy revealed widespread arteriosclerosis, with an aneurysmal dilatation of the ascending aorta, the wall of which was studded with opaque white spots, a picture consistent with the terminal ravages of syphilis. He was denied burial in Westminster Abbey and was interred in St. Martin's-in-the-Fields on Trafalgar Square.

One paper hailed him as "the first surgeon in the world," another as "the greatest philosophical surgeon and the greatest comparative anatomist which the useful art that he practised had ever known."

On March 28, 1859, 66 years later, a young and ardent admirer of Hunter and an Army surgeon, Francis Trevelyan Buckland, painstakingly undertook the laborious task of identifying his leaden coffin stored at St. Martin's-in-the-Fields in a vault containing 3,259 other coffins. (Hunter's coffin was the last but one to be inspected!) Buckland prevailed upon the Government to transfer Hunter's remains to Westminster Abbey to lie beside those of Ben Jonson.

"The Royal College of Surgeons of England has placed this tablet on the grave of Hunter to record admiration of his genius as a gifted interpreter of the Divine power and wisdom at work in the laws of organic life, and its grateful veneration for his services to mankind as the founder of scientific surgery."

Finally, the author records with outraged feeling the disgraceful plagiarisms perpetrated by Everard Home, Hunter's brother-in-law, of many of Hunter's unpublished notes, and his burning of over 30 volumes of John's notes relating to the collections in the Museum. This heinous act was disclosed to the Board of Curators of the Museum created by the Royal College of Surgeons by one William Clift, a onetime servant and devoted admirer of John Hunter, who continued as Curator of the Museum for 49 years after Hunter's death. Everard Home escaped punishment, but most of his colleagues viewed him with contempt. He died in his seventy-seventh year, a victim of gout and excessive drinking.

A glaring defect in this fascinating and well-written account of two of England's greatest surgeons and scientists is the absence of a single illustration, not even a reproduction of Sir Joshua Reynolds' masterly portrait of John Hunter, caught in a deep reverie, "when the body loses consciousness of its own existence." When the Swiss theologian, Johann Lavater, saw the portrait he exclaimed: "That man thinks for himself."

This brief review gives a very inadequate concept of the monumental and fascinating information this biography contains of the life, customs, and social conditions contemporary with Hunter's time, both in Scotland and England. The description of a country doctor's experience with "Angina Pectoris" is most valuable. Contemporary medical practices in America are also depicted in instructive manner. The book should be required "relaxation" reading for every medical student on his long and arduous journey to the practice of Medicine.

EMILE HOLMAN, M.D.

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A TEXTBOOK OF OBSTETRICS—Duncan E. Reid, M.D., William Lambert Richardson Professor of Obstetrics, and Head of the Department of Obstetrics and Gynecology, Harvard University Medical School; Chief of Staff, Boston Lying-In Hospital. W. B. Saunders Company, Philadelphia, Pa., 1962. 1087 pages, $18.50.

When a new, full sized obstetrical textbook enters the stiff competition for general acceptance by teachers, students and practitioners, one always wonders what motivated the author to undertake what must have seemed at times almost a staggering task. Reid has asked himself this question in his preface, and by way of answering it he has cited four purposes his book is intended to fulfill. Firstly he wished to relate advances in our knowledge of birth trauma, congenital malformations, prematurity, and poor reproductive performance in general to the immediate clinical situation. It is suggested that the renewed interest in human reproductive physiology may shortly lead to solutions for these distressing and widespread problems. Secondly, the author aims to promote the highest quality of patient care by presenting the process of human reproduction in the simplest of terms for those engaged primarily in supplying the vast demand for medical services. Thirdly, he set out to describe and emphasize the basic principles of good obstetrical management, with particular reference to currently accepted practices in the Boston Lying-in Hospital and Harvard Medical School, and lastly to relate the process of human reproduction to the general framework of biology and medicine as a whole.

In the main I believe he has succeeded admirably in fulfilling these objectives. The book is beautifully written and it flows along easily, perhaps because statistics, particularly the kind dealing with various series of cases recorded in the literature, have been omitted wherever possible. The author rightly points out that percentages may be of interest in certain settings but tend to lose their significance when one faces the treatment of an individual patient. There is less than the usual didactic emphasis on the mechanistic aspects of labor and delivery, but these areas have not by any means been slighted. Throughout the volume one finds much of Reid's personal philosophy about obstetric matters, and while one may perhaps not choose to embrace all his beliefs, the arguments in controversial areas are most lucidly and thoughtfully presented. The author's voice comes alive clearly and forcefully from every page.

Experts in various fields afforded help with some of the chapters. The late Thomas Goethals provided a chapter on breeches, Kurt Benirschke one on multiple pregnancy, Claude Villee a short piece on human genetics. Blood grouping problems and erythroblastosis have been covered by F. H. Allen, Jr. and a superb chapter on the newborn has been done by Harvard pediatricians Paine and Clifford. A short section on psychiatric disease in pregnancy was written by Mandel Cohen.

Comparing this new volume with the latest edition of the perennial favorite, *Williams Obstetrics*, one finds that Reid in somewhat fewer pages has included all the old, familiar chapters, some in more detail, some in less, and has added a couple of extras to lure the new reader. Clearly it is too early to evaluate the place this text will assume in obstetric teaching in the United States. All of us must try it on the firing line and find out how it fits our particular demands. Your reviewer has thoroughly enjoyed those parts of it he has had time to digest fully and intends to get better acquainted with the rest of it as the academic year progresses. He urges you to read Reid for yourself.

C. E. McLennan, M.D.

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NATURE OF PSYCHOTHERAPY, THE—A Critique of the Psychotherapeutic Transaction — Walter Bromberg, B.S., M.D., Training Consultant, Department of Mental Hygiene, State of California. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 108 pages, $4.50.

This book presents to the reader an interesting and stimulating group of opinions and insights concerning the essential nature of the psychotherapeutic transaction independent of its content or the specific theoretical orientation of the therapist. Although somewhat verbose and circuitous at times, it presents new dimensions for thinking about the psychotherapeutic process. This book reflects what appears to be the major current trend among psychotherapists: the focus on the interaction and the interactional situation rather than on what is being spoken about.

Using a combination of elements of theoretical sociological analysis, symbolic logic, and epistomology, the author examines in turn: (1) The basic presuppositions underlying dynamic psychotherapy; (2) The psychological need to explain as exists in the psychotherapist; (3) The validity of the presuppositions which underlie the psychological postulates involved in psychotherapeutic theory; (4) What the author calls extra-technical elements, the "art of psychotherapy"; (5) The therapist's position of wishing to help as a commonality in all therapies and a consistency in the therapist's position in a therapeutic situation; (6) The lack of sufficient knowledge of patient-premises underlying his part of the therapeutic interactions; and, (7) The use of the, what the author calls, "as if" model that the patient uses to view the therapist's intervention. The patient regards the therapist's explanations as if they were true and, apparently, is capable of benefiting from this micromodel of his problems independently of whatever theoretical framework within which this explanation falls. This attempt to strip the therapeutic process of its content and theoretical orientation of the therapist, although certainly not new (Wilhelm Reich and Otto Rank, among others, were struggling with the interactional problem in the early 1920's) nevertheless helps the reader focus on an aspect of therapy which, perhaps, too often is not seen.

One might, however, legitimately ask whether a therapeutic interaction can be examined by any of its members. Parsons has pointed out the importance of perspective in viewing an interactional system. It is obvious that no one member of the therapeutic dyad is less determined by interactional influences than the other one. In a sense, therefore, the author may not be in a position to be a competent observer of a therapeutic interaction. The necessity for what Parsons calls "the significant third person" is demonstrated in this book in that, perhaps, its most valid observations concerned the premises of the therapist. The author admits that he has had little contact with the patient's part of the situation. The author's use of impersonal "tools" such as the logical examination of the material, was undoubtedly an attempt to get to this third person, more objective, vantage point. One wonders, however, whether his real insights came to him as a therapist as a member of the dyad and were then rationalized using whatever logical or sociological theory analysis tools that seemed to fit.

Although far from a definitive work in the very exciting area of the exploration of the psychotherapeutic process, the book brings to the reader some interesting new thoughts and comments concerning its essential nature. It is hoped that the author, or some of his coworkers, will use some of the ideas suggested by this book as impeti for exploring the psychotherapeutic process in a more observational and objective way. If this book does nothing but stimulate some methodological pursuit of these kinds of problems, it will certainly serve a valuable purpose.

Arnold J. Mandell, M.D.

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STRABISMUS—Symposium of the New Orleans Academy of Ophthalmology—Raynold N. Berke, M.D., Diplomate, American Board of Ophthalmology; Assistant Clinical Professor of Ophthalmology, Columbia University, New York, N. Y.; Harold Whaley Brown, M.D., Diplomate, American Board of Ophthalmology; Clinical Professor of Ophthalmology, New York University Post-Graduate Medical School, New York, N. Y. David G. Cogan, M.D., Diplomate, American Board of Ophthalmology; Professor of Ophthalmology, Harvard Medical School, Boston, Mass.; John Woodworth Henderson, M.D., Ph.D., Diplomate, American Board of Ophthalmology; Professor of Ophthalmology, The University of Michigan Medical School, Ann Arbor, Mich.; Arthur Jampolsky, M.D., Diplomate, American Board of Ophthalmology; Director, Eye Research Institute, Presbyterian Medical Center, San Francisco, Calif.; and Marshall M. Parks, M.D., Diplomate, American Board of Ophthalmology; Attending Ophthalmologist, Children's Hospital, Washington, D. C. Edited by George M. Haik, M.D., Diplomate, American Board of Ophthalmology; Professor of Ophthalmology and Head of the Department, Louisiana State University School of Medicine, New Orleans, La. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1962. 369 pages, illustrated, $18.00.

This book on strabismus contains the material presented at a meeting of the New Orleans Academy of Ophthalmology. The participants were Doctors Raynold N. Berke, Harold W. Brown, David G. Cogan, John Woodworth Henderson, Arthur Jampolsky, and Marshall M. Parks. The material was edited by George M. Haik. The book is divided into 14 chapters covering the various phases of strabismus, including chapters on the neuroanatomy of ocular motility and strabismus, the neurology of amblyopia and nystagmus.

The guest speakers are all authorities in their particular fields of strabismus. In place of the usual considerations on a purely anatomic basis, the book includes the most modern concept of the neuroanatomy, physiology and neurology of the extraocular muscles. It is with this concept in mind that the esotropias, exotropias and hyeropias are discussed.

Special consideration is given to the "A" and "V" syndromes that have recently received so much attention. Pleoptics is also discussed, but one regrets that it isn't a clear, concise presentation of this new concept for the treatment of amblyopia.

That surgery of strabismus is not an exact science is brought out by Berke in his presentation. He states that "Squint surgery must be based largely on empiricism and trial and error until we know more about the pathologic changes of nonaccommodative, nonparalytic strabismus."

The last 59 pages are devoted to a round table discussion by the panel based on questions from the audience. This is one of the most important parts of the book and brings out the fact that there is still considerable difference of opinion among the authorities.

The book cannot be recommended as a textbook for the beginner in ophthalmology because of the conflicting and contradictory opinions expressed. These would only serve to confuse the student of this somewhat bewildering subject. The more experienced ophthalmologist can resolve many of these differences of opinion.

The format is outstanding with good typography and excellent paper and binding. Except for a few reproductions of photographs, the illustrations, including line drawings, surgical illustrations and reproduction of photographs, are all excellent. The 14-page index is adequate.

Frederick C. Cordes, M.D.

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PRACTICAL ANESTHESIOLOGY—Joseph F. Artusio, Jr., M.D., Professor of Anesthesiology in Surgery and Professor of Anesthesiology in Obstetrics and Gynecology, Cornell University Medical College, New York, N. Y.; Anesthesiologist-in-Chief, the New York Hospital-Cornell Medical Center, New York, N. Y.; and Valentino D. B. Mazzia, M.D., Professor and Chairman of the Department of Anesthesia, New York University School of Medicine and Postgraduate Medical School, New York, N. Y. The C. V. Mosby Company, St. Louis, Mo., 1962. 318 pages, $7.75.

The authors have prefaced the text with a statement of purpose. The book is designed for medical students and general practitioners as a handbook of current practices in anesthesiology and to be of value to the nurse anesthetist.

The reviewer has tried to assess the degree of success which has been achieved by the authors toward reaching this goal.

The experienced anesthetist at first will be inclined to regret the author's failure to consider many of the features which he believes should be included in any volume whose title includes the word "practical." In many instances he will feel relieved to find many, of what appeared to be, missing features somewhat hidden in subsequent chapters.

The forty-two chapters containing 300 pages are neatly divided into five parts—for the most part termed "Considerations." They include Basic, Preanesthesia, Anesthesia, Techniques of Administration and Special Considerations.

The chapters on Anatomical and Physiological Considerations, which precede any mention of Anesthetics provide the medical student with the same dynamic introduction to anesthesia which is familiar to him in modern, clinically oriented, medical basic science training. An opportunity to extend this concept earlier in the text to emphasize the need for and the means of insuring adequate ventilation in all patients regardless of the effects of the anesthetic agent, muscle relaxant or disease process has been missed. For example an early brief, but clear, explanation of what the anesthetist aims to accomplish by hand, or respirator, assistance or control of the patient's breathing might provide better continuity than waiting for a clue eleven chapters later in a discussion of "Ventilation," and another hundred pages for a consideration of "Emphysema." Many experienced anesthetists will regret that the advantage of slow flow rates for inflating the lungs with anesthetic atmospheres is not included in the advice regarding inflating pressures in "Practical Anesthesiology."

Complete bronchospasm developing during anesthesia requires early recognition and prompt treatment if a fatal outcome is to be avoided. Admittedly rare, it probably carries a higher priority of practicality than the danger of skin necrosis from the weight of the breathing tubes.

Many clinical anesthetists will take exception to the sole reference to ethyl chloride i.e. "explosive, may produce cardiac arrest during induction, it is not recommended." A similar disastrous result from ethyl ether vaporized in a copper kettle is entirely possible if improperly administered.

The list of "Suggested Readings" following each chapter reveals an excellent selection for which the authors are to be congratulated.

Practical Anesthesiology appears to be an extension of the lectures given by the authors to their students. In all likelihood it will be adopted as a text by other medical schools. Students and others using the book will be well advised to make constant reference to the "Suggested Readings."

The resident in anesthetics will do well to read the book and check his everyday performance against the Do's and Don'ts in Chapter 32.

All persons administering anesthetics will benefit from reading this book.

William B. Neff, M.D.

* * *

MODERN MEDICAL TREATMENT—by various authors. Edited by Henry Miller, M.D., F.R.C.P., Physician in Neurology, Royal Victoria Infirmary, Newcastle upon Tyne. Williams & Wilkins Co., Baltimore 2, Maryland, exclusive U. S. agents, 1962. 416 pages, $7.00.

As the author indicates in the preface, the primary purpose of this book is to acquaint the busy physician with therapeutic procedures which are acceptable and practicable in the treatment of patients who are afflicted with any of the more common diseases. As an approach to therapy, there are given brief descriptions of the respective disease processes and helpful diagnostic information. In most instances, anticipated responses and results are described and evaluated. Contraindications for the use of medicaments and other therapeutic procedures are included. An appendix of diets is a practical addition.

Although the author states that "the book makes no claims to be comprehensive," and that "its scope is limited to diseases encountered in the United Kingdom," it is exceptionally well done and is readily applicable to conditions in the United States. Unquestionably this compact and informative book will receive practical daily use by any practicing physician who has one.

* * *

PROPERTIES OF MEMBRANES AND DISEASES OF THE NERVOUS SYSTEM—Based on the Symposium, June 1961, Sponsored Jointly by the American Neurological Association and the American Association of Neuropathologists, Inc.; Donald B. Tower, Sarah A. Luse, Harry Grundfest. With discussions by Abel Lajtha, Murray B. Bornstein, and Ichyi Tasaki. Foreword by Melvin D. Yahr. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1962. 102 pages, $4.50.

This monograph brings together current thinking of the neurochemists, electron microscopists, and neurophysiologists, demonstrating how potentialities of the intra and surface cellular membranes of neurons may act as selective barriers producing separate functional units which are vital mechanisms of conduction, transmission, and reception of nerve impulses.

The publication advances our clarification of the exchange of ions, not only between membranes but within the membrane itself. There are not only compartmented metabolic functions separated by the membranes of opposing neurons but also compartmented metabolic functions within the neurons themselves. The blood-brain barrier has now been further clarified by demonstrating the highly specialized function of transport, and exclusion of molecules, including ions, but the special structure and function of cellular membranes of the special cellular elements of the nervous system, particularly the neuron and the astrocytes. The variable degree of permeability and impermeability of cell membranes in relation to pinocytosis and phagocytosis, as well as the manner in which certain viruses can adapt themselves to the invasion of the special membranes of neuronal elements, has been an important neurobiological advance in our understanding of the pathogenesis of the so-called "neurotropic" viruses, particularly in relation to release of viral DNA into host cells. The electronmicroscopic study of myelin has clarified its formation from the cell membrane and cytoplasm of Schwann cells of peripheral nerves and oligodendrocytes of the CNS.

Though this monograph on the properties of membranes of the nervous system seems remote from the diagnosis and treatment of neurological disorders, such investigations are laying the groundwork for further clarification of the etiology and pathogenesis of disorders of the nervous system, a specialty in medicine where ignorance continues to outweigh knowledge.

Knox Finley, M.D.

* * *

ILLUSTRATED MANUAL OF NEUROLOGIC DIAGNOSIS—R. Douglas Collins, M.D., Captain, USAF, MC, Neurologist, 7505th USAF Hospital R.A.F. Burderop, Wiltshire, England; former special trainee for the National Institute of Neurological Diseases and Blindness, Jefferson Medical College Hospital, Philadelphia. With a Foreword by Rudolph Jaeger, M.D., Professor and Chief, Department of Neurological Surgery, Jefferson Medical College and Hospital, Philadelphia. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1962. 177 pages, 97 illustrations of Neurologic Diseases, $12.00.

Dr. Collins' goal was to present a simplified technique for the average physician to suspect neurologic disease. Within the limits of the complexity of the subject, the author is well on his way to accomplishing his aim in a brief, readable if somewhat oversimplified format. The essential neuroanatomy around which neurologic localization is built is portrayed in semi-diagrammatic colored plates conveniently coded. The basic principle of establishing the location of the lesion and then its nature is followed in the organization.

A visual recapitulation of the steps in the neurological examination is offered initially and the author has given at least one established approach to the elicitation and interpretation of each important neurologic sign. There follows a simple tabulation of abnormal findings which would be associated with disease in the various anatomical sites of the neuraxis, first in the longitudinal and then in the transverse dimension. In this category little attention is given to cervical spine or cervical vessel findings or the abnormalities of pediatric neurology or the deformations observed in the spine and extremities or about the orbits.

In the tabulation it is difficult to give emphasis to the relative importance of the various signs which are elicited. A tabulation of the possible pathologic changes to be found in association with disease in specific anatomical sites or systems is presented. A list of the various laboratory diagnostic procedures and their indications is useful. A central 100 pages of the book are devoted to a presentation of examples of disease entities involving one or more portions of the neuraxis.

A most elementary protocol of a case and the differential diagnosis is presented together with the visual display of the location of the disease. No inclusion of pathologic details or therapy is attempted. Details are not to be found in this book. No processes are described comprehensively.

The author provides a brief list of general neurologic reference texts to which the physician may refer. A summary of the parts of the body which require examination and the features to look for in the examination of that particular part is appended as is a breakdown of the signs which may be interpreted as involving one or multiple tracts or specific systems above and below the foramen magnum.

A brief glossary to terms which might be unfamiliar is included and a reasonable index completes the volume. The general approach is one of making easy, in almost cookbook fashion, the elicitation and interpretation of abnormal findings without any attempt to discuss disease as such. Little or no emphasis is placed upon the history or the tempo of the disease. In the glossary the reader will not find a careful breakdown of the important terms applied to impairment of consciousness and one finds the term "semi-conscious" appear within the book.

One might argue with utilization of the term "platybasia" as opposed to "basilar invagination" or "basilar impression" as being responsible for one of the neurologic syndromes which is presented. These critical points merely appear as a result of the laudable attempt to put into a short book and in the most elementary form the essentials of the field such that the average physician may have a workable skeleton upon which to build his assessment of his patient's problem. The diagrams are well presented, if not detailed. The print is most readable. The book is beautifully produced. The cost is explained in part by the numerous color plates. This is a book for the student of elementary neurology, nothing more.

W. Eugene Stern, M.D.

* * *

FUNDAMENTAL SKILLS IN SURGERY—Thomas F. Nealon, Jr., M.D., Associate Professor of Surgery, Jefferson Medical College. Illustrated by Ellen Cole. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 289 pages, $8.50.

The conscientious interne or junior resident who has just received a surgical service assignment, faces his new position with a certain amount of fear, apprehension and confusion. This book is written with this chap in mind; to guide him in fundamentals which he later will do automatically. It is strictly a Primer for the embryo surgeon, which is the author's intent, and which makes it an entirely different text book. The twenty-two chapters are well illustrated and concise giving information regards routine surgical care, surgical instruments, operating room conduct, sutures, dressings and anesthesia, infection, burns, minor surgery of superficial tissues and gastrointestinal intubation. Problems which the embryo surgeon may encounter and which he may have to be prepared to deal with "on his own" are reviewed in separate chapters on head and neck, upper extremity, breast, chest, abdomen, anorectal region, lower extremity and urinary tract, with one on infants and children. A separate chapter on resuscitation and one on the circulatory system including fluid and electrolyte therapy completes the review.

The seasoned surgical resident will of course consider this book as too elementary, but the fledgling who has not yet attained such exalted position, will welcome the helping hand which this book affords. The author covers about everything which the embryo surgeon might encounter in his surgical service. I would make one suggestion or criticism and that is that the chapter on electrolytes should have been more inclusive of the various problems which may and do so often arise to confuse the whole staff.

Conrad J. Baumgartner, M.D.

TEXTBOOK OF OPHTHALMOLOGY—Seventh Edition

—Francis Heed Adler, M.D., Emeritus Professor of Ophthalmology, University of Pennsylvania Medical School; Consulting Surgeon, Wills Eye, Philadelphia General, and Children's Hospitals of Philadelphia. W. B. Saunders Company, Philadelphia, Pa., 1962. 560 pages, Illustrated with 288 figures and 26 color plates, $9.00.

This is the 7th edition of the book originally written by Sanford Gifford, first published in 1938. It was written primarily as a textbook on ophthalmology for the medical student and general practitioner. The book eliminated all the rare conditions and dealt with the "run-of-the-mill" conditions that would be of interest to the medical student and to the general practitioner.

Upon Gifford's death, Adler took over the revision of the book and has improved it with each new edition. As stated in the preface, Adler has consistently given space only to those features of ophthalmology that are of medical and neurological interest.

The book is divided into 24 chapters. The first few chapters deal with the various methods of examining the eye and its functions. This is followed by chapters on the diseases of the various structures of the eye. The chapters near the end of the book discuss the ocular disorders due to diseases of the central nervous system; the ocular manifestation of general diseases and the therapeutic agents used in ophthalmology.

The final chapter, which is on ocular injuries, is a very convenient, concise account of the first aid treatment of eye injuries.

The most unusual new feature of the book is the first chapter on symptomatology of eye diseases. This is divided into two parts, the first discussing the ocular visual symptoms, the second part dealing with non-visual symptoms. After each symptom, in parentheses, is a reference to some portion of the book. For example, under sudden loss of vision of one eye are listed a number of causes. One of these is central retinal vein obstruction, and at the end of this statement is a page reference to a section of the book dealing with this subject.

The book has become a classic for the medical student and the general practitioner. It is also recommended as a good introduction to the subject of ophthalmology for the first-year resident in ophthalmology. To the practicing ophthalmologist, it is a handy, condensed, concise reference book.

The index is adequate. The format is excellent, the paper is of good quality and the print easily readable. The line drawings, reproduced photographs and color reproductions are outstanding. The binding is good and should withstand a good deal of use.

All in all, it is an excellent book.

Frederick C. Cordes, M.D.

* * *

THE MOLD OF MURDER—A Psychiatric Study of Homicide

—Walter Bromberg, M.D., formerly Director, Psychiatric Clinic, Court of General Sessions, New York, N. Y., and Training Consultant, Department of Mental Hygiene, State of California. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1961. 230 pages, $4.75.

Television's fare, current paper-backs, and the continuing popularity of Edgar Allen Poe attest to man's perennial interest in and fascination with violent crime. In this new book Dr. Bromberg narrows the field of his earlier *Crime and the Mind*, published in 1948, to present an exploration of murder, focusing primarily on the murderer and the society in which he develops. Turning his attention first to the "normal" murderer, the author then discusses among others, the female murderer, the psychopathic murderer, the psychotic killer, the adolescent murderer, the emotionally immature, the role of alcohol, the sexual psychopath. Some medico-legal problems are explored. Throughout, the author emphasizes the dynamic, motivated significance of the murder act to the individual murderer. Murder occurs when "the inhibiting, defensive or sublimating mechanisms of the ego are insufficient to curb direct expression of aggressive impulses." A second main theme of this book is the intimate role of society in the murder phenomenon. The author pointedly reduces the gap between the average man and the murderer. "The criminal acts out those impulses and fantasies which the law-abiding citizen represses and abhors . . . society loves its crime but hates its criminals." There is even a possible analogy here, which the author does not draw, between Szurek and Johnson's adolescent delinquents who are acting out the unconscious wishes of the parents, and the murderer's relation to society. In his discussion on prevention of murder, the author presents an unusual proposal that television be used in a long-term "psychodrama by television" mass educational program. The author has made liberal use of case histories which are interestingly presented. This is not a textbook, but an absorbing, readable, often penetrating exploration of an important problem. The author's presentation tends to develop in his reader a certain attitude and approach to the problem of homicide which breaks down traditional individual and societal mechanisms of isolation and reaction formation. Though quite suitable for the intelligent layman, the book is of especial interest to those who are in more direct contact with the problem of murder: judges, lawyers, probation and parole offices, social workers, etc. A bibliography and index are included.

Ronald S. Mintz, M.D.

* * *

PROGRESS IN RADIATION THERAPY—Volume II

—Edited by Franz Buschke, M.D., Professor of Radiology, University of California School of Medicine, San Francisco (With 17 contributors). Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 266 pages, $12.50.

Like its predecessor, this small monograph consists of a series of articles dealing with the various phases of clinical radiotherapy and allied topics.

The first two chapters deal with so-called radiation nephritis. The value of these would be enhanced were an attempt made to correlate more clearly the presumed radiation changes with the precise estimated kidney dose (expressed in roentgens, time and area). The author, Luxton, does emphasize "in the diagnosis of radiation nephritis, it is important to know the state of the kidneys before radiotherapy." Since this information is often lacking, many of the statements are post hoc in nature.

There is an excellent chapter on tolerance of cartilage and bone in clinical radiation therapy by R. G. Parker. This clinical therapist notes that in a study of 110 epitheliomata of the skin of the nose, in which two-thirds of the cases had involvement over the tip of the nose or the ala, and who were treated over ten years ago with conventional low voltage x-ray therapy (120 kv), or orthovoltage (200 kv) to doses up to 4600 r skin, in 5 days, there had only been a single instance of cartilage necrosis. This involved the anterior nasal septum, was then associated with persistent tumor and has subsequently been cured by resection. This reviewer agrees that with competent orthovoltage radiotherapy the incidence of cartilage insult in the treatment of most skin cancers is nominal. In this same section, the author points out that "supervoltage" irradiation has not been established as reducing the incidence of bone necrosis.

There is a chapter on periodic fractionation of treatment by Botstein which might be described as more enthusiastic than informative. Together with a few of the other chapters in this monograph, this one particularly shows the need for adequate controls before making sweeping conclusions as to apparent improvements. Indeed, one hopes all the contributors will read Dr. Buschke's thoughtful comments on page 4 dealing with the evolution of 606, and the fact that its discoverer did not publish the 605 unsuccessful attempts leading to the development of that valuable therapeutic agent.

The recrudescence of interest in attempting conjunction of radiation and surgery is discussed by Bloedorn who emphasizes on page 127 that "these studies are still incomplete and give only fragmentary information." Again, the need for controls is manifest. This reviewer questions the wisdom of the sentence "radiotherapists should be more aggressive in the treatment of advanced cancers which are still localized . . . bladder . . ." Aggressiveness in the face of nonradiocurable disease may leave the unfortunate patient considerably less happy than before. On the other hand this same author must be commended for his observation:

"A common mistake in radiotherapy is to consider that the irradiation ought to be started as soon as the diagnosis of malignancy is made . . . an attitude (often) imposed by the referring physician . . . in the particular group of patients dealt with in this kind of combined therapy, the malignancy is probably older than a year, and a waiting period of two to three weeks, especially if used to improve the general and local condition, will make little difference in the local extension of the tumor or in the production of metastases."

The chapter on chemotherapy by Papac brings up to date the present attitude towards the use of this agency alone or in conjunction with radiation therapy. Concerning 5-fluorouracil, she observes that the responses with this drug have generally been brief, few exceeding even three months in duration. The response rate in cancer of the breast is reported as varying upwards from 10 per cent, and in cancer of the colon from 10 to 15 per cent. The drug has a narrow therapeutic range and in effective doses, regularly produces clinically significant and often serious toxicity. In fact, in the treatment of carcinomas of the gastrointestinal tract, the use of this drug is best considered an investigative rather than a conventional therapeutic modality.

There is a chapter on reirradiation by Kramer which is useful, and one on limitations of histologic diagnosis by Rambo which should be required reading for physicians dealing with carcinoma.

In a brief, 13-page introduction, the editor makes a plea for division of radiological residency training into separate therapeutic and diagnostic pigeonholes, although he believes that "general radiologists are still needed." He produces no scientific evidence to support the belief that localized, curable cancer is better handled by a radiation therapist than by a general radiologist. On the contrary he stresses the importance of sound clinical judgment and individualization of therapy, which certainly is attainable by a good clinician in either of these disciplines. He notes that in Russia a broad plan calls for the training of 2,000 radiotherapists between 1960 and 1965, but one of his chapters (contributed by Lenz after a month in Russia three years ago) contains the not unexpected news that "among 1,348 physicians working in oncology in the Russian Federated Republics, only 30.7 per cent had what would be considered adequate training," a shortcoming adumbrated by Koslova.

Perhaps the only criticism of this interesting monograph should be applied to the second paragraph on page 2 in which well established orthovoltage roentgen therapy is accorded a rather cavalier, carbolic acid spray. The author seems to forget that Meschan and colleagues after 8 years' experience with telecobalt beam therapy recently reported an increasing incidence of serious late complications—late subcutaneous and deeper fibrotic changes which are proving to be disabling to patients. In addition to impairment of function of the affected part, there are instances of serious neurologic damage, osteoradionecrosis, ulceration and stenosis of intestine, fractures of femoral neck, and pelvic fibrosis simulating persistent or recurrent neoplasm. These complications, in competent hands, are fortunately not common. However, they have replaced the skin insults of earlier radiotherapy which were indeed more readily recognized and more easily treated. This reviewer is sure that subsequent volumes will deal with these problems in adequate detail and will stress that small cobalt and cesium units are in fact less effective both physically and clinically than standard 250 kv orthovoltage x-ray therapy apparatus. It is the voltage of the radiologist's brain and not his machine that is important.

L. H. Garland, M.D.

* * *

ESSENTIALS OF PEDIATRIC PSYCHIATRY—Rubin Meyer, M.D., Associate Professor of Pediatrics, Morton Levitt, Ph.D., Professor of Psychology and Assistant Dean; Mordecai L. Falick, M.D., Associate Professor of Psychiatry; and Ben O. Rubenstein, Ph.D., Associate Professor of Psychiatry, Wayne State University College of Medicine, Appleton-Century-Crofts, Meredith Publishing Company, 34 West 33rd Street, New York 1, N. Y., 1962. 208 pages, $6.00.

The appearance of this book marks one more bridge between the pediatric practitioners seeking for help with psychologic problems and those clinicians whose time is spent mostly dealing with such difficulties. The organization of this book is most intriguing. The authors have taken a very reasonable number of pages to discuss the relation between pediatrics and psychiatry both historically and currently. Secondly, the foreword of this book contains a very clear and yet brief description of psychic development so that the pediatrician or general practitioner reader may understand the complex problems of this maturation. There is a clear treatment of the conscious and unconscious and of the various defense mechanisms that all of us use in order to avoid both our anxieties and those problems which grow out of our anxiety.

It is this comprehensive presentation of modern theory that makes the description of specific clinical situations much more understandable. It becomes possible for the reader to understand how the particular problems of childhood grow out of the abnormalities of psychic development. The authors then go on to discuss both normal and abnormal development and then take up special problems which result as disorders of such development. Special chapters are given to the emotional reactions of trauma and hospitalization, to the brain damaged and mentally defective child, and to certain of the special clinical syndromes such as the psychoses.

Finally a clear discussion of diagnostic measures is included. This is important not only in itself but as pointing the way to an adequate and suitable kind of referral. It is the clarity with which this is done that makes this book, in addition to its good consistent theoretical base, a very valuable one. Many of the textbooks written for pediatricians tend to approach the child in a very piecemeal fashion and discuss different psychiatric disorders as if they were remote entities. This book has succeeded in avoiding this problem, and very properly belongs in the office of the pediatrician or general practitioner dealing with children and their parents.

Henry H. Work, M.D.

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KEY TO ABBREVIATIONS USED

(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (PE)—Page End.

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Use of False Vocal Cords Can Cause Hoarseness

Speaking with the false vocal cords is a common cause of hoarseness, according to Dr. Herbert L. Fred, Baylor University College of Medicine, Houston.

The vocal cords, two small bands of tissue, are made up of the false cords and the true cords, which are normally used for speaking. The false cords lie above the true cords in the larynx, or voice box.

Using the false cords for speaking makes the voice much lower than normal with a small range of pitch, Dr. Fred wrote in the October *Archives of Internal Medicine*, published by the American Medical Association.

In typical cases, hoarseness varies in severity and often is worse at the end of the day, he said. Intermittent loss of voice, voice-cracking, a feeling of tiredness in the throat, fear of speaking, and persistent attempts to clear the throat are other frequent symptoms, he said.

The possible causes of the condition include psychological stress, abuse of the voice, and disease of the larynx, Dr. Fred said, but in many cases the cause cannot be found.

Speech therapy is useful and helps some patients to regain and maintain normal speech, he said, but others do not respond to any form of treatment.

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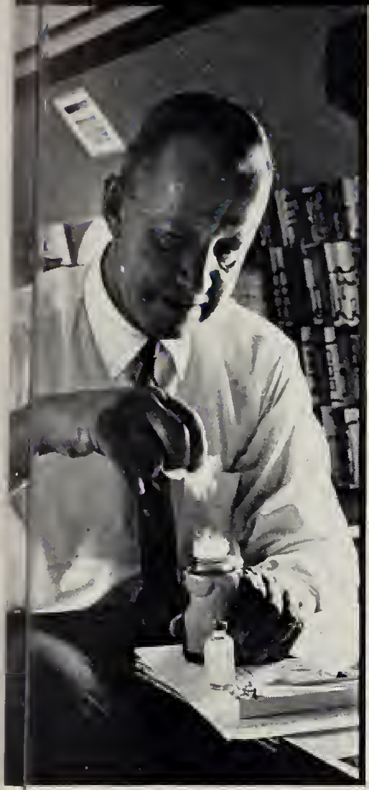

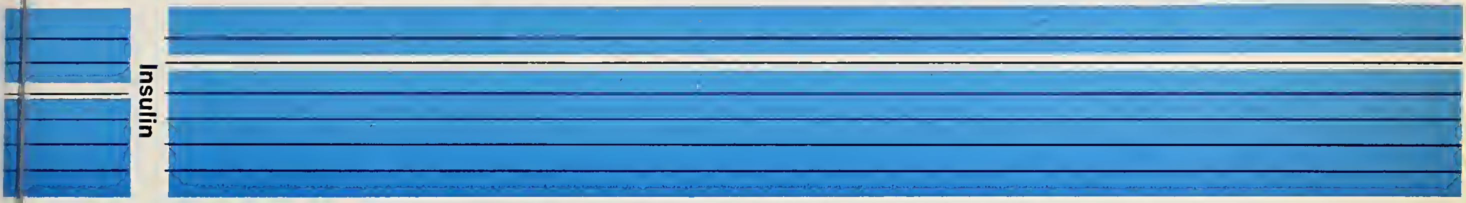

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A.M.A. Broaches Plan to Boost Pay For Interns, Residents

Income from prepaid medical plans should be made available to interns and residents when they perform services for which fees are provided under such plans, an American Medical Association report said recently.

"Many hospitals formerly accepting predominantly indigent patients now find their patients capable of paying for all or a portion of their care either directly or through some third party," the report said. "These 'paying patients' include not only those covered by some form of insurance, but also those covered by welfare department fees for professional services."

This changed economic status of the hospital patient population offers a possible solution to the "inappropriately low" financial compensation of interns and residents, it said.

The special report, prepared by the A.M.A. Council on Medical Education and Hospitals and the A.M.A. Council on Medical Service, will be considered by the House of Delegates, policy-making body of the A.M.A., at the A.M.A. clinical meeting at Los Angeles, November 25-28. It was published in the October 27 *Journal of the American Medical Association.*

Since patients capable of paying for medical services necessarily are now becoming of increasing importance to the training of interns and residents, this results inevitably in interns and residents providing medical services for which professional fees are available, the councils said. Fees attributable to services provided by interns and residents to paying patients should be collected and used exclusively for financial support of hospital training programs for graduate medical students, it said.

All applicable fees should be collected and deposited in a special fund, according to the report. Such funds have been established in some hospitals, a recent survey showed.

As to the level of compensation, the councils said the intern and resident "should receive a salary which will enable him to support himself and his family without the necessity of resorting to outside help or work."

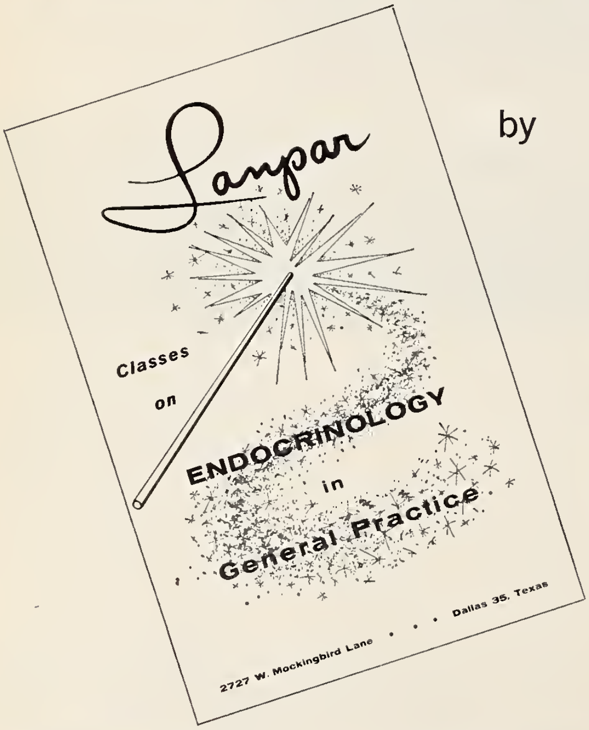
"A specific minimum salary cannot be set in view of geographic and other differences between hospitals, but cost-of-living studies might be used as guides in the development of appropriate salaries," the report said.

The councils also urged "an objective reappraisal of the true value of house officer service."

Citing the fact that 85 per cent of medical graduates spend 1 to 4 years in residency training and most of these face 2 to 5 years of deficit financing before entering practice, the councils said reform

(Continued on Page 78)

ENDOCRINOLOGY IN GENERAL PRACTICE



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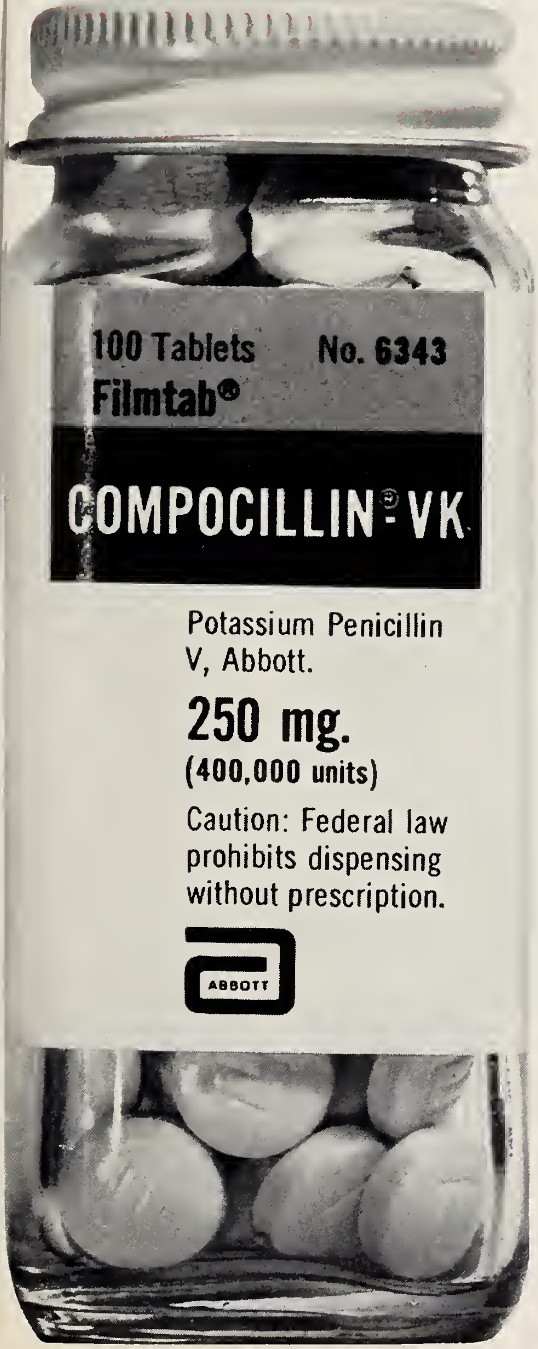
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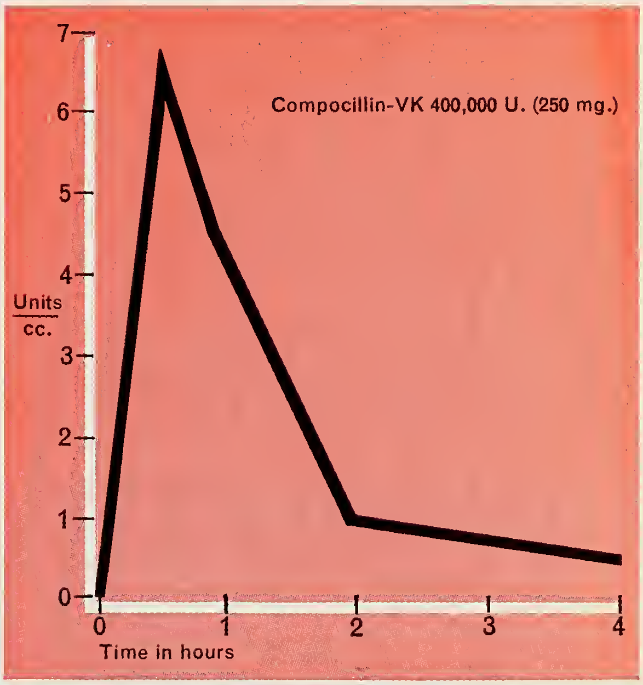

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A.M.A. Broaches Plan to Boost Pay For Interns, Residents

(Continued from Page 70)

of the traditional level and method of financial compensation of house officers is vital to attract an adequate number of young persons into the medical profession and to assure that all future physicians receive the full degreee of training they desire.

The increasing cost of hospitalization to the patient is a major concern of the public, the profession and hospitals, the report pointed out, adding:

"Under the present system of financing intern and resident programs, an increased burden will be placed on the patient as hospitals generally increase the salaries paid to house officers."

The community, particularly its medical component, have an opportunity and responsibility to influence those concerned with the operation of prepaid medical care plans to assure that such income be made available for graduate training programs, the councils said. The methods for improving the salary level must be developed locally through the mutual efforts of hospitals, health insurance groups and welfare and other community agencies, they said.

If contributions from the hospital governing body, and from the community, as well as collections of fees for the care of paying patients are insufficient to provide the desired salary levels, then the hospital's attending staff should accept the responsibility for providing the needed funds by the most appropriate means, they said.

In developing an appropriate method, the councils said, any increased costs involved should be spread among the hospital, attending staff, and patients in proportion to the benefits each receives from the services of the interns and residents.

Recognizing that there are difficulties regarding the billing and collecting of fees from paying patients or prepayment plans for the services of interns and residents, the councils said these difficulties might be obviated if the interns and residents were employed by a partnership of the hospital's attending staff. Under such an arrangement, they said, the partnership could bill and collect fees ethically and legally for the services of its employees.

Field Test of Simple, Foam-Producing Chemical Contraceptive—A. Russell and A. R. Parchment. New York J. Med., 62:2491 (Aug. 1) 1962.

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